

2014 - JCR Evaluation Form

SPECIES: Elk
 HERD: EL104 - HOBACK
 HUNT AREAS: 86-87

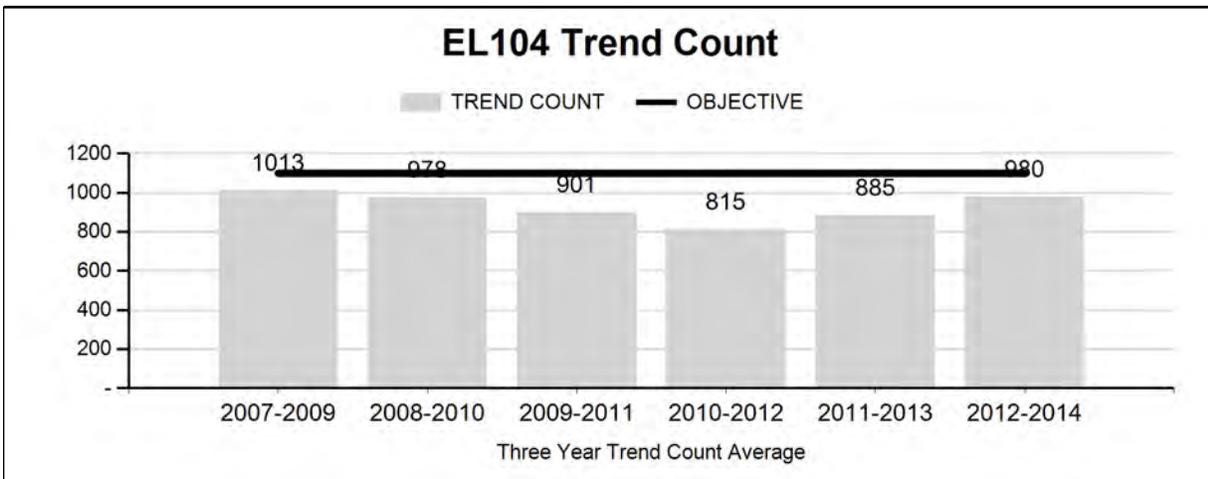
PERIOD: 6/1/2014 - 5/31/2015
 PREPARED BY: DEAN CLAUSE

	<u>2009 - 2013 Average</u>	<u>2014</u>	<u>2015 Proposed</u>
Trend Count:	907	1,107	1,100
Harvest:	241	190	240
Hunters:	796	679	740
Hunter Success:	30%	28%	32%
Active Licenses:	802	683	740
Active License Success	30%	28%	32%
Recreation Days:	5,578	4,724	5,500
Days Per Animal:	23.1	24.9	22.9
Males per 100 Females:	19	15	
Juveniles per 100 Females	32	35	

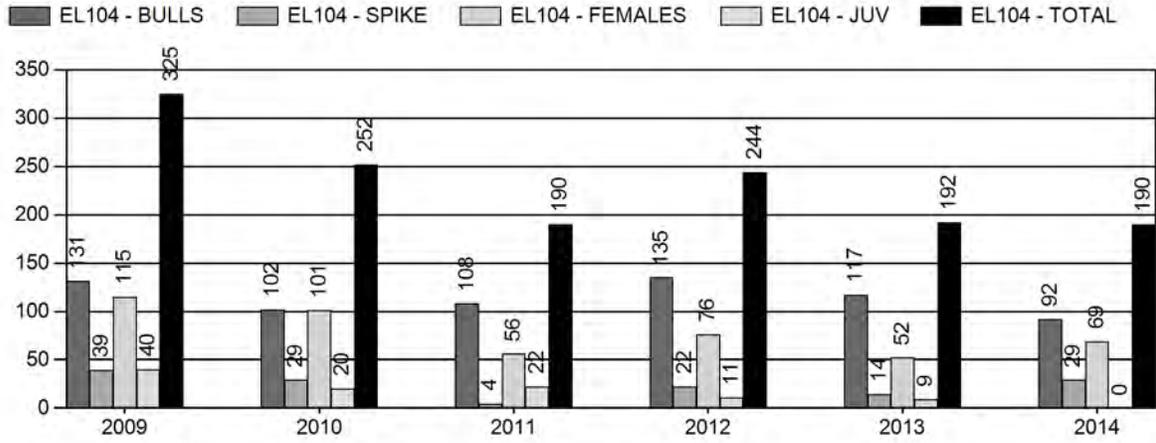
Trend Based Objective ($\pm 20\%$) 1,100 (880 - 1320)
 Management Strategy: Recreational
 Percent population is above (+) or (-) objective: 1%
 Number of years population has been + or - objective in recent trend: 0

Proposed harvest rates (percent of pre-season estimate for each sex/age group):

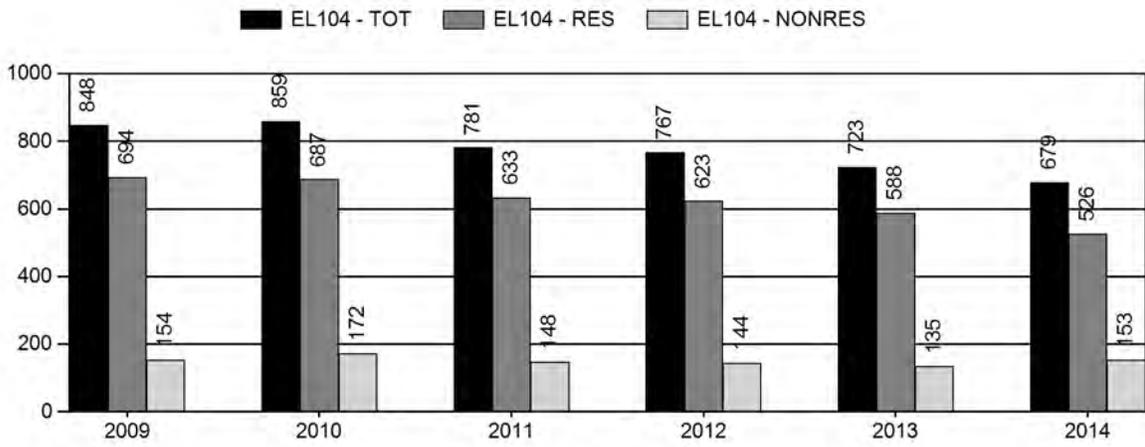
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



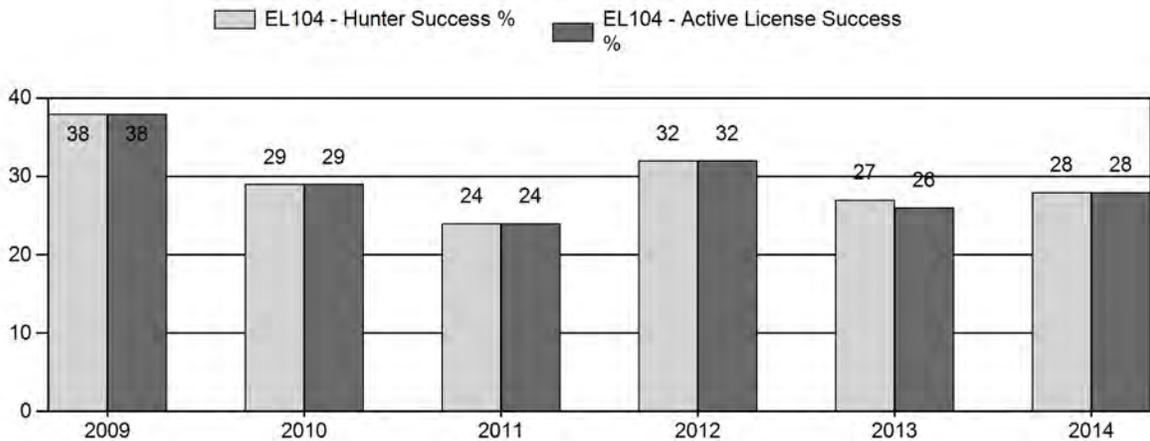
Harvest



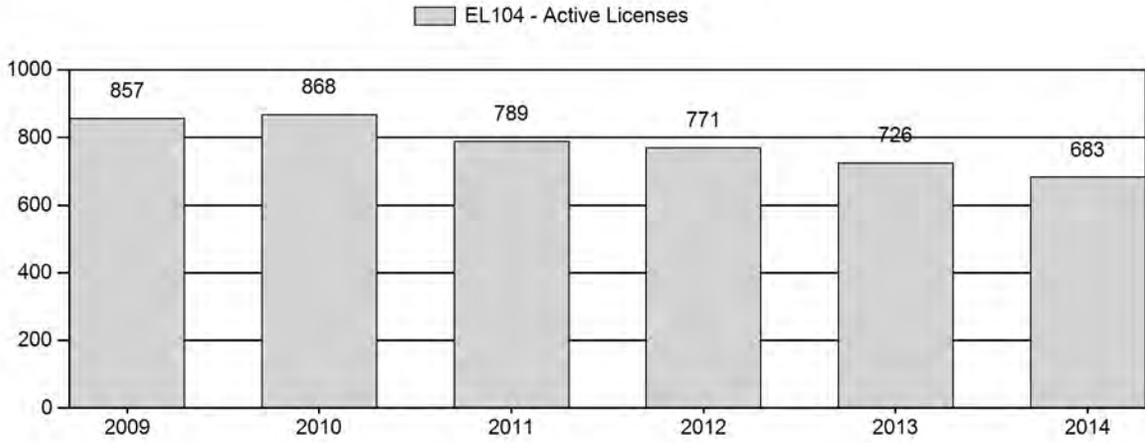
Number of Hunters



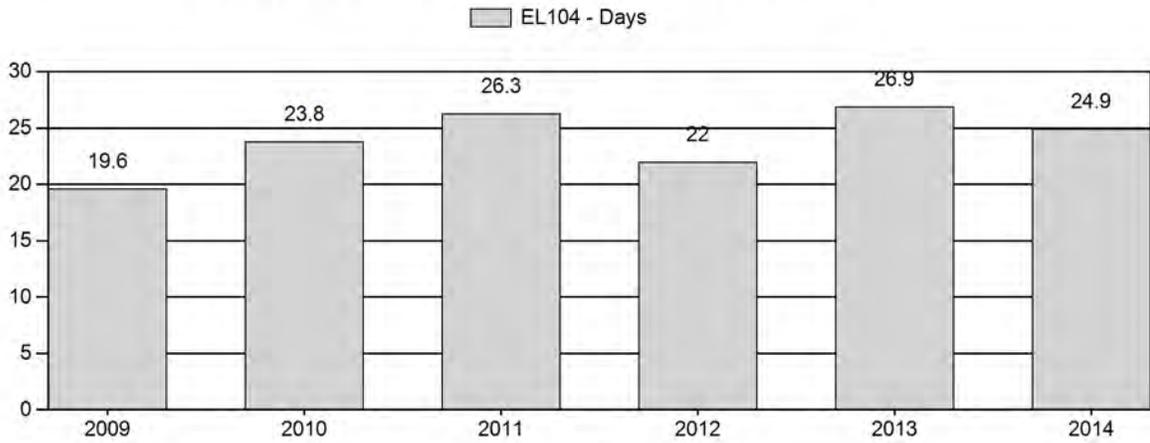
Harvest Success



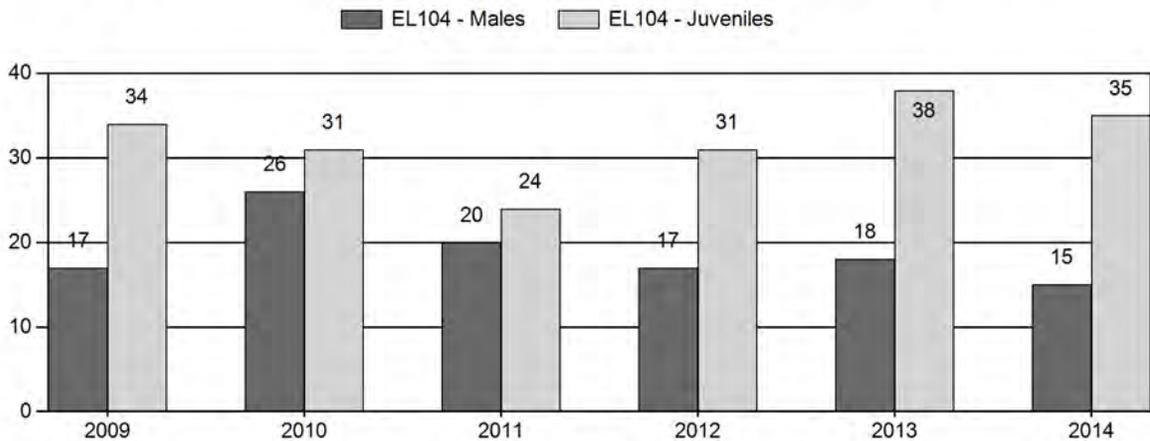
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2009 - 2014 Postseason Classification Summary

for Elk Herd EL104 - HOBACK

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	Cls Obj	Males to 100 Females			Young to			
		Ylg	Adult	Total	%	Total	%	Total	%			Ylg	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2009	1,076	59	55	114	11%	670	66%	229	23%	1,013	319	9	8	17	±0	34	±0	29
2010	850	60	80	140	17%	533	64%	164	20%	837	281	11	15	26	±0	31	±0	24
2011	823	45	69	114	14%	573	70%	135	16%	822	204	8	12	20	±0	24	±0	20
2012	0	20	70	90	11%	533	68%	164	21%	787	264	4	13	17	±0	31	±0	26
2013	0	55	54	109	11%	617	64%	235	24%	961	349	9	9	18	±0	38	±0	32
2014	0	42	62	104	10%	689	66%	244	24%	1,037	325	6	9	15	±0	35	±0	31

2015 Seasons – Hoback Elk Herd Unit (EL104)

Hunt Area	Type	Opens	Closes	Quota	License	Limitations
86		Sept. 26	Oct. 31		General	Any elk
		Nov. 1	Nov. 15		General	Antlerless elk
87		Oct. 15	Oct. 31		General	Any elk valid south of U.S Highway 191.
		Oct. 15	Oct. 31		General	Antlered elk valid north of U.S Highway 191.
		Nov. 1	Nov. 15		General	Antlerless elk valid south of U.S Highway 191.
	6	Dec. 1	Jan. 31	75	Limited quota	Cow or calf valid south and east of Dell Creek, north and east of U.S. Highway 191, and west of the North Fork of Fisherman Creek.
Archery Seasons						
86		Sept. 1	Sept. 25			Refer to Section 3
87		Sept. 1	Sept. 30			Refer to Section 3

Summary of Changes in License Numbers

Area	Type	Changes from 2014
87	6	+50
EL104 Totals	6	+50

Management Evaluation

Current Mid-Winter Trend Count Management Objective: 1,100

Management Strategy: Recreational

2014 Trend Count: 1,107

Most Recent 3-year Running Average Trend Count: 980

The Hoback Herd Unit encompasses approximately 341 square miles of occupied elk habitat almost entirely within Sublette County. Hunt Areas 86 (Monument Ridge) and 87 (Raspberry

Ridge) make up the Hoback Herd Unit. This herd unit is managed under a mid-winter trend objective of 1,100 ($\pm 20\%$) with a herd estimate derived from a 3-year trend count average on feedgrounds and native range combined. This herd is managed under “recreational” management, with a management objective for bull: cow ratio of 15 to 29.

Herd Unit Issues

Managers believe a very high proportion (>90%) of elk are typically counted in this herd unit and are located on feedgrounds during the winter. This is an extremely “leaky” herd unit and as a result, a population model has not been successfully developed. Elk are annually documented moving into and out of this Hoback herd unit resulting in annual winter trend counts that can vary from year to year. In addition the Dell Creek feedground has struggled to maintain elk numbers near the winter objective of 400 elk. Low elk numbers at Dell Creek feedground can partially be attributed to the close proximity of this feedground to the Fall Creek herd unit and summer/fall use in that adjacent herd unit where more liberal elk harvest strategies occur. Elk depredation on private land haystacks and cattle feed lines north of Hwy 191 continue to be a problem in most winters.

Weather

Elk in this herd unit experience the coldest winter temperatures compared to all others herd units in western Wyoming, which may result in higher feedground dependence, even on low snow years. Heavy snow loads typically make most native forage unavailable on most winters.

Habitat

Diverse habitats from low elevation willow bottoms and sagebrush/grass, to aspen and mixed conifer, to high elevation tall forb, white-bark pine, and alpine make this herd unit rich for a wide array of wildlife. Due to the heavy snow accumulations and cold temperatures during winter, over 90% of the elk rely on supplemental feeding (feedgrounds) within this herd unit. Therefore winter and other seasonal habitats are not considered to be limiting herd dynamics in this herd unit.

Field Data

The 2014 postseason trend count of 1,107 elk observed on Department-operated elk feedgrounds and native winter ranges, showed an increase compared to the low trend counts from 2010-2012 (Table 1). Very few elk (n=85) were counted away from established feedgrounds in Areas 86 and 87, which is typical for this herd unit due to climatic conditions. Snow conditions were below normal this past winter (2014-15). Over 90% of the documented elk numbers were from feedground locations.

Table 1. Herd Composition Counts in the Hoback Herd Unit, 2005-2014

Location	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Dell Creek F.G.	258	297	311	345	298	228	205	171	242	294
McNeel F.G.	716	598	591	687	701	596	613	544	706	728
<u>N.W.R.</u>	<u>70</u>	<u>67</u>	<u>38</u>	<u>23</u>	<u>44</u>	<u>13</u>	<u>4</u>	<u>72</u>	<u>99</u>	<u>85</u>
Herd Unit Total	1044	962	940	1055	1043	837	822	787	1047	1107

The 2014 postseason ratios of 15 bulls:100 cows:35 calves, shows a decrease in the bull ratio and an increase in the calf ratio compared to the 5-year average bull:cow:calf ratios of 19:100:32. The 2014 bull ratio is at the low end for the management goals for this herd unit.

Harvest Data

Additional antlerless harvest opportunities were made available starting in 2008 continuing through 2011 in Area 86 and the southern portions of Area 87. Liberal seasons were designed to help reduce elk numbers from surrounding herd units, as many of these animals move into the Hoback during the spring/summer/fall period. The 2014 harvest survey indicated a total harvest of approximately 190 (120 bulls and 70 cows/calves) which similar to the 2013 reported harvest. Hunter success was 28% and days/harvest was 25, compared to the 5-year average of 30% success and 23 days/harvest. The lower success and increased hunter effort in 2014 can be attributed to conservative antlerless elk seasons (primarily the north portion of Area 87) and mild fall conditions.

Population

Starting in 2012, a mid-winter trend count was used to manage this herd unit instead of hand-derived population model estimates. This is an extremely “leaky” herd unit and as a result, a functional computer simulation model has never been developed. The post hunt population trend objective for this herd is 1,100 elk ($\pm 20\%$). The 2012-2014 mid-winter 3-year trend count average is 980 elk, which is within the management goals for this herd objective.

Management Summary

The Hoback Herd Unit is extremely “leaky” in regards to elk moving in and out of the herd on a seasonal basis. Fluctuations of up to 260 animals between annual winter counts are common without any rational explanation for the changes. Radio collared (GPS) elk and harvest data from elk ear tagged at Franz (located in the Piney herd unit), McNeel, and Dell Creek feedgrounds have documented movement among herd units quite well. Ear tag data has documented 29% to 43% harvest outside the herd unit where those elk were tagged. Radio collared elk movements outside the herd units from where the animals was collared are as follows; McNeel at 0%, Dell Creek at 63%, and Franz at 89%.

Since 2008, hunting seasons were designed to increase harvest on antlerless within the Hoback herd unit as well as surrounding herd units, which can be attributed to low elk numbers during 2010-2012. In 2012 seasons were changed to reduce female harvest in response to low elk numbers during the winter of 2011-2012. Currently, adequate bull:cow:calf ratios are being maintained. The recent mid-winter 3-year trend average was 980 elk, 11% below the objective of 1,100, although the 2014 winter trend increased to 1,107. Herd management for 2015 will be similar to 2014; eliminate all antlerless harvest in the northern portion of Area 87 in an effort to allow the postseason (winter) population to increase, while slightly increasing cow harvest in Area 86 and the south portion of 87.

The 2015 hunting seasons for this herd unit will be similar as 2014, with additional harvest opportunities provide for antlerless elk. In Area 87, the general license season is “any” elk during the entire season (Oct. 15 – Oct. 31) south of U.S. Highway 191, and “antlered” elk north of U.S. Highway 191. Additional harvest opportunities for antlerless elk will be available from

Nov. 1 – Nov. 15 south of U.S. Highway 191. A total of 75 (increase of 50) limited quota Type 6 (cow/calf) licenses are available in a portion of Area 87, valid from Dec. 1 (change from Nov. 19) through January 31, in an effort to reduce damage to privately stored hay crops. The 2015 season in Area 86 offers a general license, “any” elk hunting from September 26 through October 31, with additional harvest opportunities for antlerless elk available from Nov. 1 – Nov. 15. The 2015 hunting seasons are projected to harvest approximately 240 elk (140 bulls, 100 cows/calves).

BRUCELLOSIS MANAGEMENT (E104) - 2014

BRUCELLOSIS/POPULATION SURVEILLANCE

Ninety-two elk were captured via corral trap for brucellosis surveillance and research regarding strain 19 vaccination efficacy at Dell Creek in 2015. Brucellosis seroprevalence of yearling and older females was 39% (12/31) at Dell Creek (Table 1). Since 1998, the average seroprevalence has been 35% (228/657). No elk were captured at McNeel in 2015. Since 1997, average seroprevalence has been 58% (23/40).

STRAIN 19 BALLISTIC VACCINATION

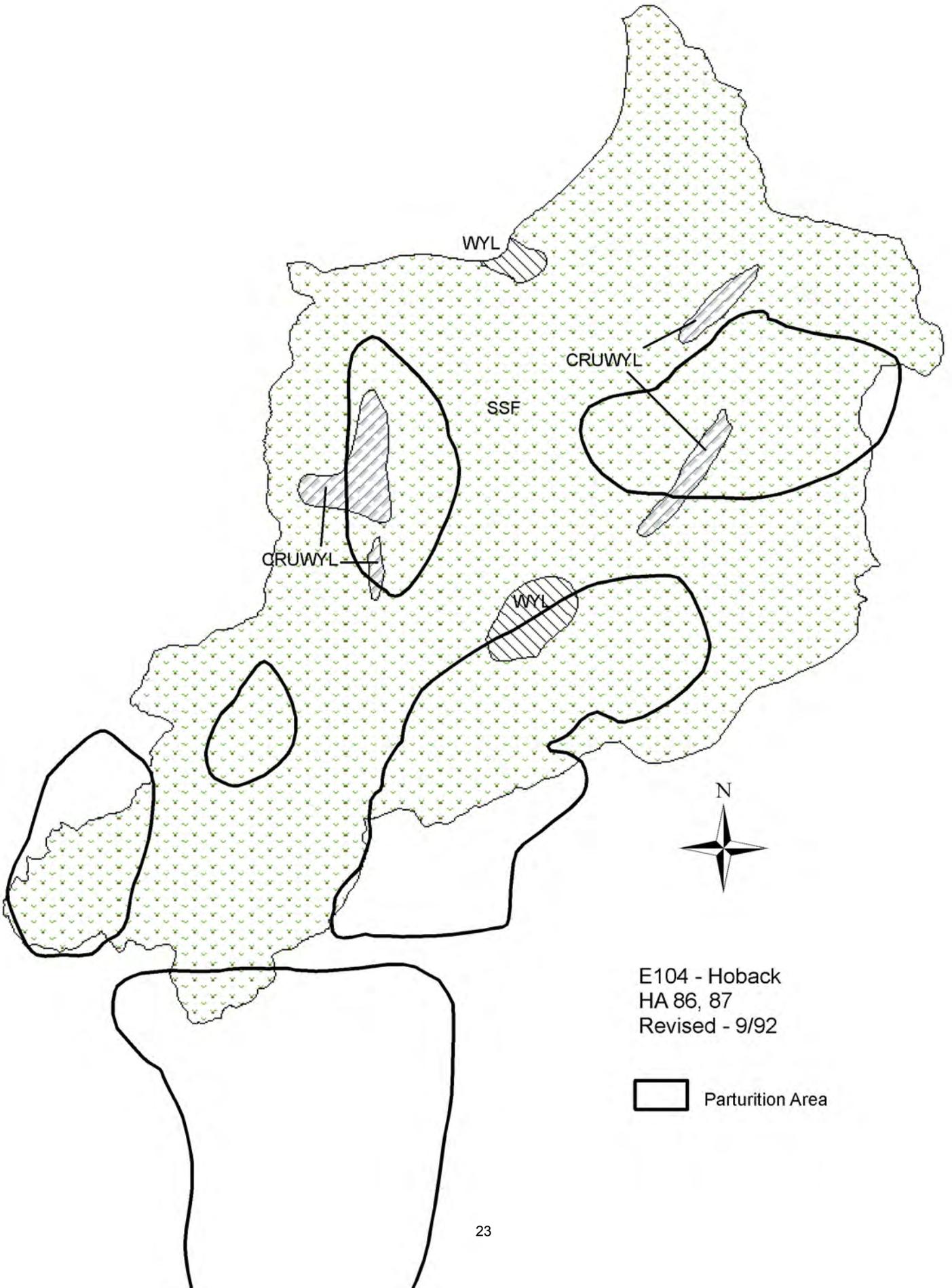
One hundred ten of 170 (65%) juveniles were vaccinated at McNeel Feedground during several days in 2015. Since 1992, at least 3,015 of a possible 3,306 juveniles (91%), 706 adult females, and several undocumented yearlings have been vaccinated. No strain 19 vaccination has occurred at Dell Creek feedground as this site hosts the control population for comparison of seroprevalence and reproductive failure data with other vaccinated feedground elk.

RESEARCH – STRAIN 19 VACCINATION EFFECTS ON ABORTIONS

WGFD initiated the Strain 19 (S19) ballistic vaccination program in 1985 at Grey's River feedground, and by 1997, all state-maintained feedgrounds (excluding Dell Creek) were incorporated. No study has assessed efficacy of the S19 program based on abortions. To determine the proportion of seropositive elk aborting and birthing among vaccinated and non-vaccinated feedgrounds, BFH personnel utilized vaginal implant transmitters (VITs) from 2006-2014. Twenty-two percent (8/36) and 16% (15/95) of seropositive females from non-vaccinated and vaccinated feedgrounds aborted.

RESEARCH – ELK PARTURITION

In 2014, two VITs were deployed at Dell Creek, and neither were within currently delineated elk parturition range.



E104 - Hoback
HA 86, 87
Revised - 9/92

 Parturition Area

2014 - JCR Evaluation Form

SPECIES: Elk
 HERD: EL106 - PINEY
 HUNT AREAS: 92, 94

PERIOD: 6/1/2014 - 5/31/2015

PREPARED BY: GARY FRALICK

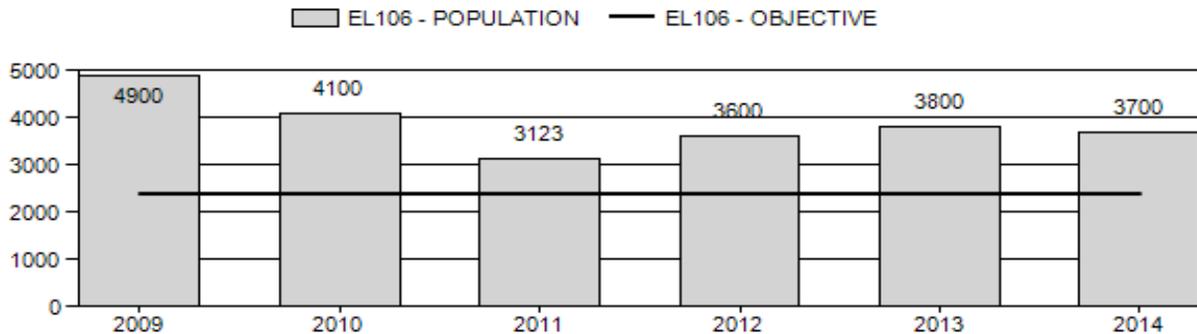
	<u>2009 - 2013 Average</u>	<u>2014</u>	<u>2015 Proposed</u>
Population:	3,905	3,700	2,980
Harvest:	1,016	884	1,085
Hunters:	3,151	3,085	3,500
Hunter Success:	32%	29%	31%
Active Licenses:	3,310	3,245	3,500
Active License Success:	31%	27%	31%
Recreation Days:	26,999	27,534	28,431
Days Per Animal:	26.6	31.1	26.2
Males per 100 Females	33	42	
Juveniles per 100 Females	33	39	

Population Objective (± 20%) : 2400 (1920 - 2880)
 Management Strategy: Recreational
 Percent population is above (+) or below (-) objective: 54%
 Number of years population has been + or - objective in recent trend: 10
 Model Date: 5/26/2015

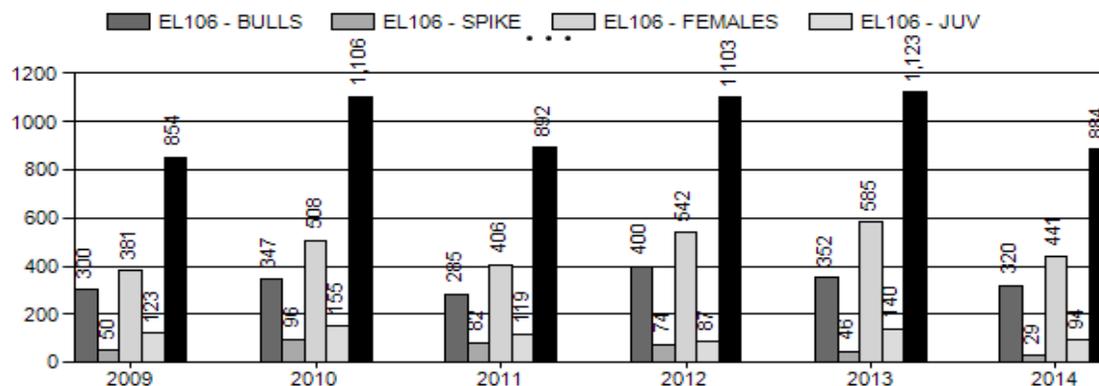
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	20%	25%
Males ≥ 1 year old:	28%	38%
Juveniles (< 1 year old):	14%	22%
Total:	21%	29%
Proposed change in post-season population:	-8%	-20%

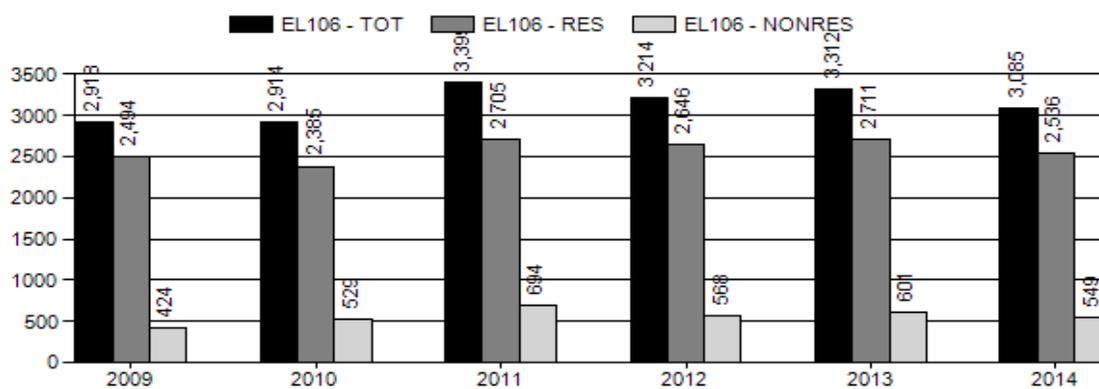
Population Size - Postseason



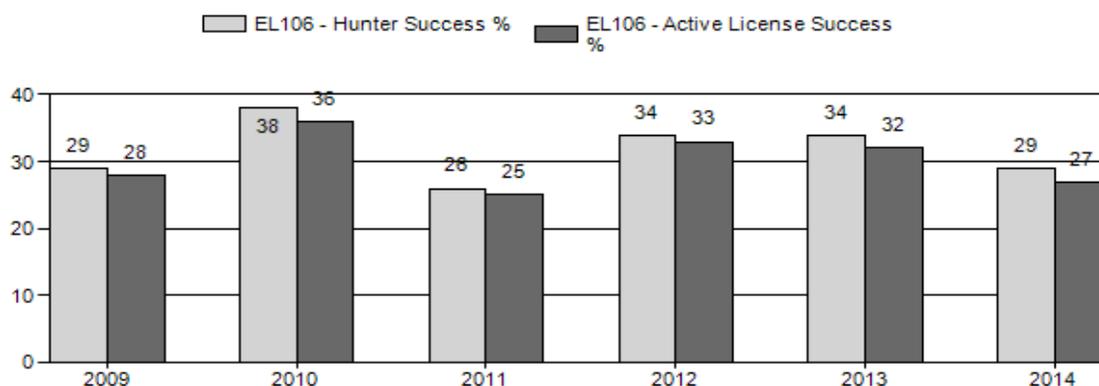
Harvest



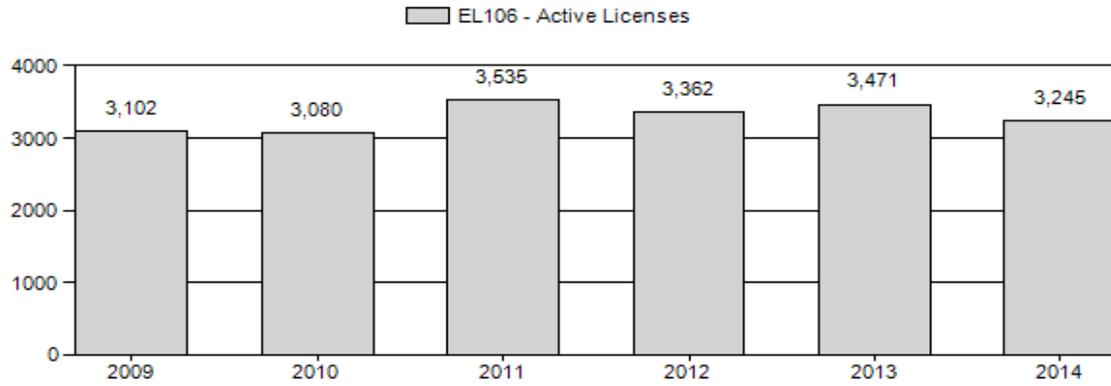
Number of Hunters



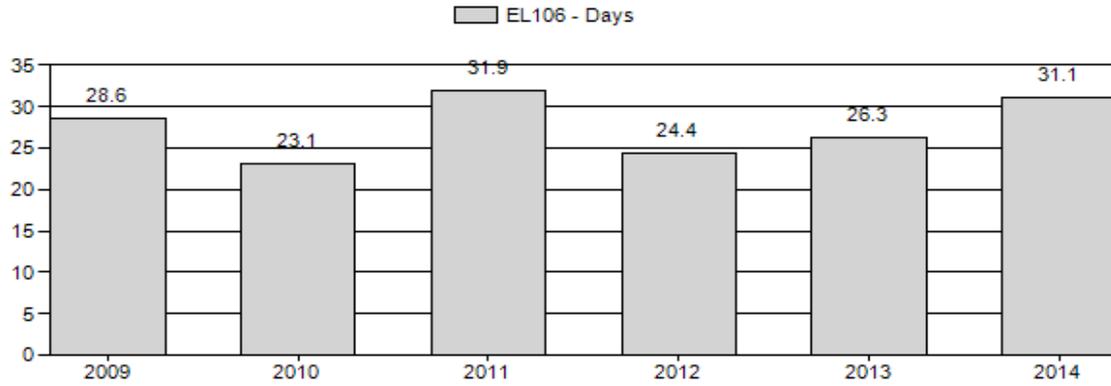
Harvest Success



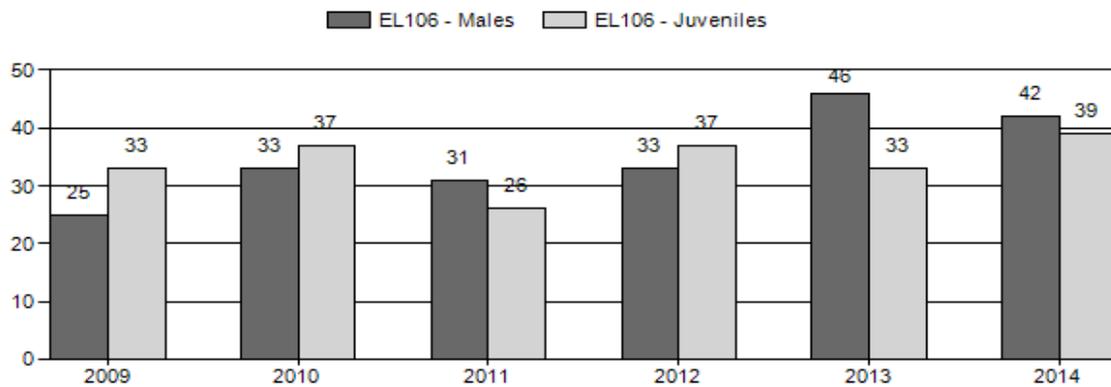
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2009 - 2014 Postseason Classification Summary

for Elk Herd EL106 - PINEY

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			YIng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2009	4,900	190	216	406	16%	1,618	63%	539	21%	2,563	403	12	13	25	± 1	33	± 1	27
2010	4,100	199	357	556	19%	1,683	59%	621	22%	2,860	0	12	21	33	± 1	37	± 1	28
2011	3,123	217	302	519	20%	1,660	64%	425	16%	2,604	369	13	18	31	± 1	26	± 1	20
2012	3,600	261	306	567	19%	1,705	59%	639	22%	2,911	0	15	18	33	± 1	37	± 1	28
2013	3,800	240	380	620	26%	1,337	56%	443	18%	2,400	613	18	28	46	± 2	33	± 1	23
2014	3,700	157	458	615	23%	1,476	55%	579	22%	2,670	595	11	31	42	± 1	39	± 1	28

**2015 HUNTING SEASONS
PINEY ELK HERD UNIT (EL106)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
92		Oct. 15	Oct. 31		General	Any elk – SEE SECTION 6
		Nov. 1	Nov. 23		General	Antlerless elk – SEE SECTION 6
	6	Oct. 1	Nov. 23	500	Limited quota	Cow or calf – SEE SECTION 6
	6	Nov. 24	Jan. 31			Unused Area 92 Type 6 licenses valid off national forest east of Sublette County Roads 115, 116, and 117 and south of the North Beaver Road – SEE SECTION 6
94		Oct. 15	Oct. 31		General	Any elk – SEE SECTION 6
		Nov. 1	Nov. 23		General	Antlerless elk – SEE SECTION 6
	6	Oct. 1	Nov. 23	450	Limited quota	Cow or calf – SEE SECTION 6
		Dec. 1	Jan. 31			Unused Area 94 Type 6 and Type 7 licenses valid on the Big Piney Hunter Management Area (HMA permission slip required) – SEE SECTION 6
	7	Nov. 1	Nov. 30	100	Limited quota	Cow or calf valid north of Middle Piney Creek – SEE SECTION 6
92		Sep. 1	Sep. 30			Archery only – SEE SECTION 4
94		Sep. 1	Sep. 30			Archery only – SEE SECTION 4

SUMMARY OF PROPOSED CHANGES BY LICENSE NUMBER

Area	License Type	Change from 2014
Herd Unit		No Changes
Total		

Management Evaluation

Current Postseason Population Management Objective: 2,400

Management Strategy: Recreational

2014 Postseason Population Estimate: ~3,700

2015 Proposed Postseason Population Estimate: ~2,980

The population objective for Piney elk herd is 2400 elk. The management strategy is recreational management. The objective and management strategy were revised in 2011. The current population estimate is 3700 elk.

Herd Unit Issues

Since 2005 sustained population reduction has been difficult to achieve. Hunting opportunities are some of the most liberal in western Wyoming. Management strategies have emphasized hunter opportunity by promoting antlerless elk harvest with November hunting seasons and issuance of limited quota cow/calf only licenses. While both hunt areas continue to support winter elk numbers at or above Commission-established feedground quotas, Area 94, and specifically the Bench Corral feedground has supported the highest increase in elk.

Weather

Weather conditions during the 2014 were ideal for forage production beginning in early spring and continuing through fall. By late summer the moisture regime had changed frequent precipitation scenario that persisted into the fall hunting season. Drought conditions in the early portion of the summer abated by late fall as persistent snow storms began to deposit snowpack in the Wyoming and Salt Mountain Ranges. By mid winter snow conditions on winter ranges had changed significantly with little to no snow had accumulated on core winter ranges. These conditions persisted throughout the remainder of the winter. By late winter 2015 snowpack in western Wyoming watersheds were estimated to be at or slightly above normal. For additional weather and precipitation data please visit the following websites:

<http://www.ncdc.noaa.gov/temp-and-precip/time-series> and
<http://www.ncdc.noaa.gov/oa/climate/research/prelim/drought/pdiimage.html>.

Habitat

Winter range browse plants have been measured each spring and fall to assess production and utilization since the late 1990s. Growing conditions improved in 2014 on winter ranges because of moisture regimes during early spring and summer. Leader production on Wyoming big

sagebrush and black sagebrush were the species most notably improved compared to the 2013 leader growth. However, average leader growth was still less than a half inch for Wyoming big sagebrush sites and less than two inches for mountain shrubs. For additional site specific information, please refer to the 2014 Annual Report Strategic Habitat Plan Accomplishments, for the Pinedale Region habitat improvement project summaries (<http://wgfd.wyo.gov/web2011/wildlife-1000708.aspx>).

Field Data

Since 2005, sustained population reduction has been difficult to achieve. Management strategies have emphasized the harvest of antlerless elk with November hunting seasons and issuance of limited quota cow/calf licenses. While both hunt areas continue to support winter elk numbers at or above Commission-established feedground quotas, Area 94, and specifically the Bench Corral feedground, has supported the highest increase in elk. Consequently, hunting opportunities, especially for antlerless elk in Area 94 where trend counts continue to remain high, will continue to be liberal in order to affect the desired population reduction. Limited quota Type 6 cow/calf licenses will focus on the antlerless segment of the population since these license holders typically account for at least 50% of the antlerless harvest in the herd unit. Limited quota Type 7 cow/calf licenses are designed to harvest elk that migrate to the Bench Corral feedground.

Harvest Data

Hunter success was estimated at 29% in 2014 with a total harvest estimated at 884 elk. General license hunters accounted for 68% of the total elk harvest, and 47% of the total antlerless harvest. Limited quota Type 6 and 7 license holders accounted for 53% of the total antlerless elk harvest. The majority of this harvest likely occurred in late October and through November, and affirms the management strategy to promote antlerless harvest when elk are more likely to be present at lower elevation and accessible to hunters. Antlerless harvest by Type 6 license holders has resulted in a stabilization of the total elk counted during the annual trend count prior to the 2014 hunting season when overall harvest, and specifically antlerless harvest, declined in the current year. However, antlerless hunting is an essential component of the elk management strategy. Hunting seasons will continue to manage the reproductive segment of the population and emphasize cow harvest with limited quota licenses holders during the months of October and November. The management goal of maintaining the postseason bull: cow ratios of at least 20 bulls:100 cows have been achieved.

Population

The population trend is decreasing, but only slightly. The “Constant Juvenile and Adult Survival – CJ,CA Model” spreadsheet model was chosen for the post season population estimate. This model provides the best model alignment with low AICc value of 359 and fit of 350. This model also tracks reasonably with observed bull:cow ratios, bull harvest percentages, and annual population dynamics.

Management Summary

The 2015 hunting seasons are designed to reduce the Piney elk toward the objective of 2400 elk. The emphasis to harvest adult female elk in both hunt areas will continue for the 8th consecutive year by opening the limited quota antlerless elk hunting on October 1. In addition, the number of days for the November portion of the antlerless elk hunting season will extend to November 23 for general license hunters and limited quota Type 6 hunters. A total of 500 and 550 Type 6 and Type 7 licenses will be available in Areas 92 and 94, respectively.

A substantial change first initiated in 2014 that focuses harvest on antlerless elk north of Middle Piney Creek will be continued in 2015. Limited quota Type 7 cow/calf only licenses will be valid north of Middle Piney Creek from November 1 – 30. This hunt is designed to focus harvest on that segment of the population that spends the winter on the Bench Corral feedground. For the 3rd consecutive year, hunters will be permitted to harvest up to three elk in this herd.

The 2015 hunting seasons are projected to harvest approximately 1100 elk. The 2015 posthunt population estimate will be approximately 2980 elk.

BRUCELLOSIS MANAGEMENT (E106) – 2014

BRUCELLOSIS SURVEILLANCE

During January and February of 2015, 10 adult female elk were captured on Franz (3), Bench Corral (4) and Finnegan (3) with chemical immobilization; brucellosis seroprevalence of captured females was 33%, 50%, 0%, respectively. Since 1982, seroprevalence at Franz, Bench Corral, Finnegan, Jewett, and North Piney has averaged 39% (64/163), 19% (11/59), 12% (14/116), 29% (39/133), and 19% (8/42).

STRAIN 19 BALLISTIC VACCINATION

In 2015 on Bench Corral, Finnegan, Franz, and Jewett, 0, 35, 28, and 81 juveniles were vaccinated. Elk classifications were compromised by limited snow, warm temperatures, and elk tolerance of humans, therefore proportions vaccinated (i.e., coverage) could not be calculated except on Finnegan (58%, 35/60) and Jewett (96%, 81/84). Elk did not attend North Piney and have not for at least 2 years. Since 1996, at least 9,130 doses of strain 19 have been delivered to juvenile elk.

INPUT	
Species:	Elk
Biologist:	Gary Fralick
Herd Unit & No.:	Pinney Elk
Model date:	05/26/15

Clear form

MODELS SUMMARY		Relative AICc	Fit	Notes
CJ,CA	Constant Juvenile & Adult Survival	359	350	
SC,J,SCA	Semi-Constant Juvenile & Semi-Constant Adult Survival	43576	43567	
TS,J,CA	Time-Specific Juvenile & Constant Adult Survival	373	258	
TS,J,CA,MSC	Time-Specific Juv, Constant Adult Survival, Male survival coefficient	300001	299990	

Check best model to create report

- CJ,CA Model
- SC,J,SCA Model
- TS,J,CA Model
- TS,J,CA,MSC Model

Year	Posthunt Population Est. Field SE	Trend Count	Population Estimates from Top Model				Total	Objective	
			Predicted Posthunt Population Juveniles	Predicted Posthunt Population Total Males	Predicted Posthunt Population Females	Total			
1993			1193	1262	3077	5533	882	2850	4880
1994			1609	1396	3293	6298	702	2845	5047
1995			1378	1389	3455	6223	1047	3251	5604
1996			1435	1532	3657	6624	1187	3244	5798
1997			1085	1794	3777	6656	1306	3238	5507
1998			1297	1717	3579	6593	1211	3093	5541
1999			1504	1767	3558	6829	1150	3151	5686
2000			1268	1663	3592	6523	1112	2923	5147
2001			1149	1552	3298	5998	1087	2986	5148
2002			1119	1478	3309	5906	1148	3088	5275
2003			1115	1523	3393	6031	1135	3144	5316
2004			1351	1509	3446	6306	1033	3050	5322
2005			1417	1491	3437	6345	1141	3335	5920
2006			1508	1654	3693	6855	1187	3256	5781
2007			1392	1704	3774	6870	1220	3354	5832
2008			1117	1679	3737	6534	1378	3251	5637
2009			1174	1732	3538	6444	1347	3119	5505
2010			1256	1792	3501	6549	1305	2942	5332
2011			862	1774	3352	5987	1371	2901	5015
2012			1055	1675	3150	5879	1144	2556	4658
2013			907	1558	2919	5385	1114	2188	4026
2014			867	1418	2454	4738	1021	1949	3717
2015			717	1283	2177	4177	799	1627	2984
2016									
2017									
2018									
2019									
2020									
2021									
2022									
2023									
2024									
2025									

Survival and Initial Population Estimates

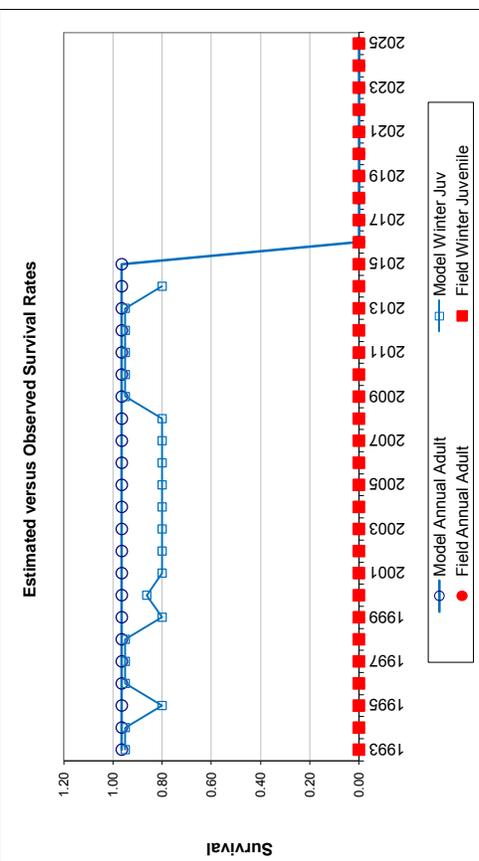
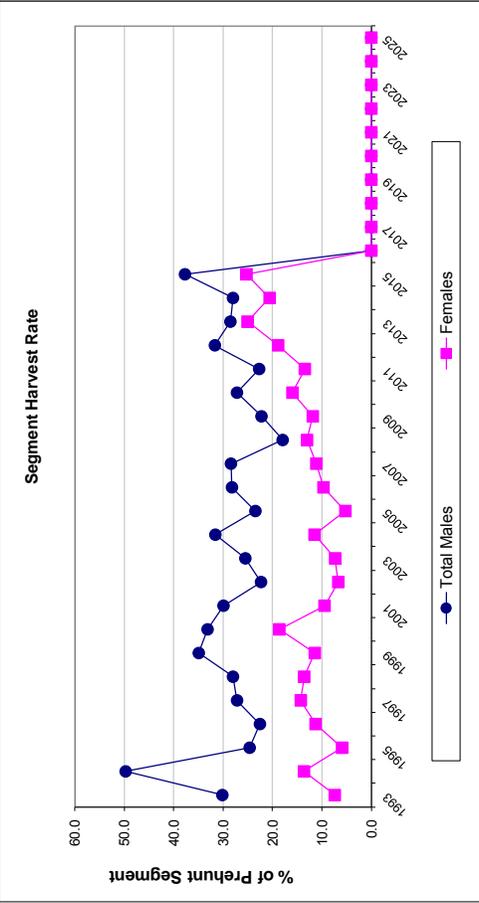
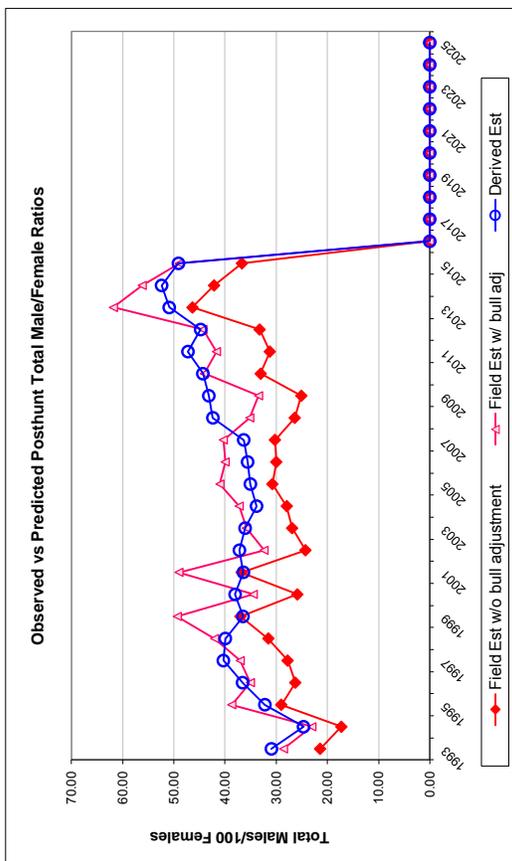
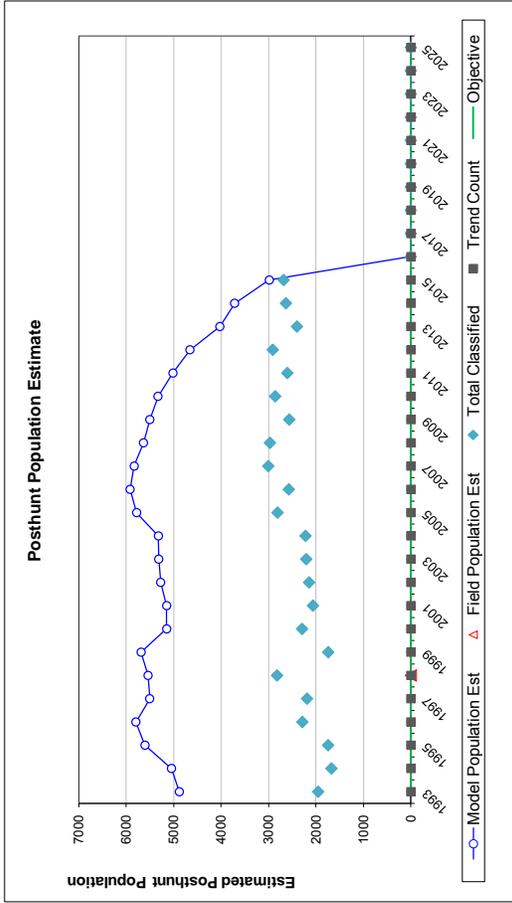
Year	Annual Juvenile Survival Rates		Annual Adult Survival Rates	
	Model Est	Field Est	Model Est	Field Est
1993	0.95		0.96	
1994	0.95		0.96	
1995	0.80		0.96	
1996	0.95		0.96	
1997	0.95		0.96	
1998	0.95		0.96	
1999	0.80		0.96	
2000	0.86		0.96	
2001	0.80		0.96	
2002	0.80		0.96	
2003	0.80		0.96	
2004	0.80		0.96	
2005	0.80		0.96	
2006	0.80		0.96	
2007	0.80		0.96	
2008	0.80		0.96	
2009	0.95		0.96	
2010	0.95		0.96	
2011	0.95		0.96	
2012	0.95		0.96	
2013	0.95		0.96	
2014	0.80		0.96	
2015			0.96	
2016				
2017				
2018				
2019				
2020				
2021				
2022				
2023				
2024				
2025				

Parameters:		Optim cells
Adult Survival =		0.964
Initial Total Male Pop/10,000 =		0.088
Initial Female Pop/10,000 =		0.285

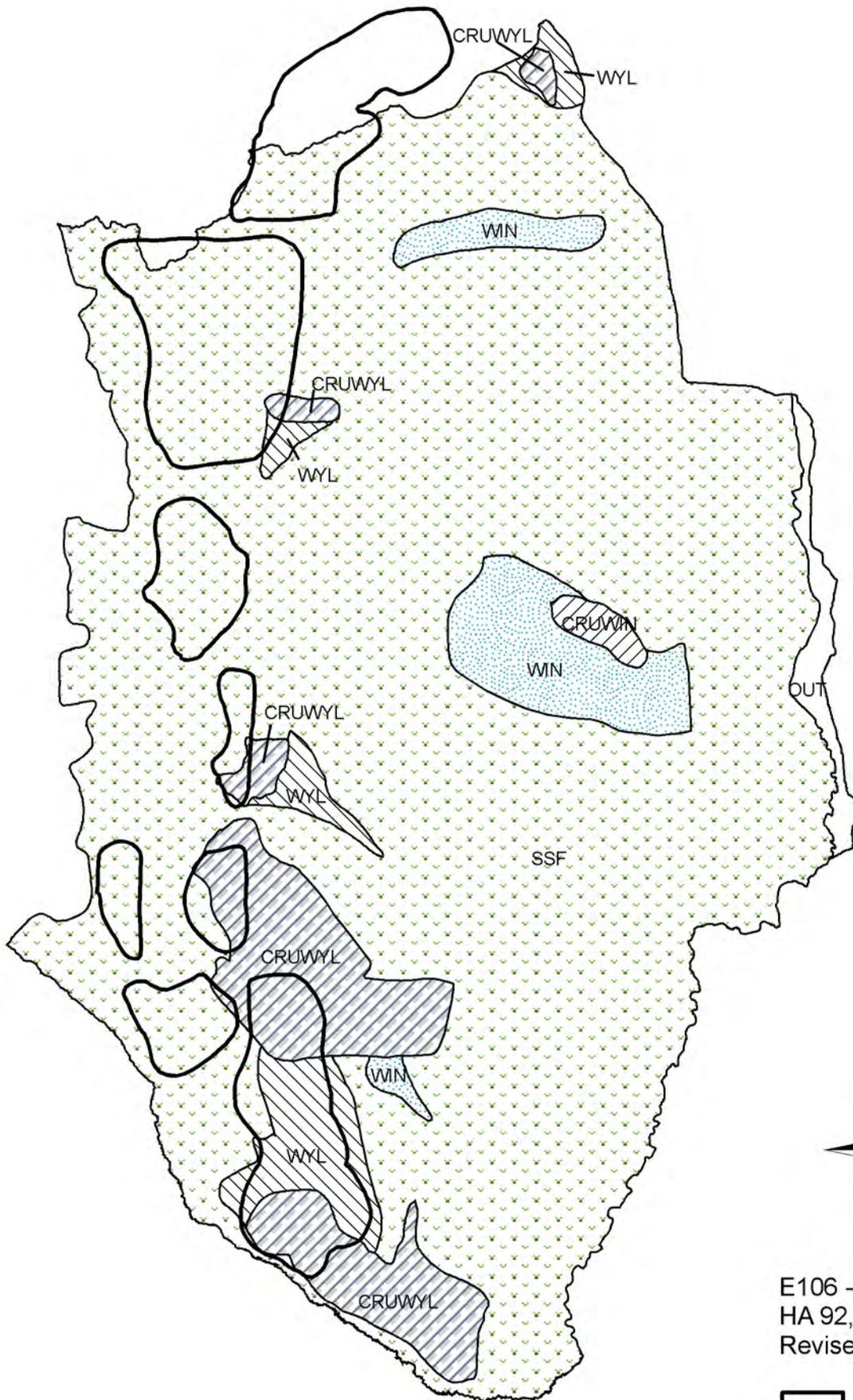
MODEL ASSUMPTIONS	
Sex Ratio (% Males) =	50%
Wounding Loss (total males) =	10%
Wounding Loss (females) =	10%
Wounding Loss (juveniles) =	10%
Total Bulls Adjustment Factor	75%

Year	Classification Counts										Harvest				
	Juvenile/Female Ratio					Total Male/Female Ratio					Segment Harvest Rate (% of Prehunt Segment)				
	Derived Est	Field Est	Field SE	Derived Est	Field Est w/ bull adj	Field Est w/o bull adj	Field SE	Juv	Yrl males	2+ Males	Females	Total Harvest	Total Males	Females	
1993		40.31	2.16	30.94	28.59	21.44	1.47	40	116	230	207	593	30.1	7.4	
1994		52.74	2.86	24.67	23.04	17.28	1.43	99	144	487	408	1138	49.7	13.6	
1995		40.19	2.34	32.22	38.71	29.03	1.91	65	120	191	186	562	24.6	5.9	
1996		42.12	2.10	36.59	35.05	26.29	1.56	62	74	240	375	751	22.5	11.3	
1997		29.73	1.67	40.34	37.05	27.79	1.60	111	156	287	490	1044	27.2	14.3	
1998		39.16	1.82	39.96	42.05	31.54	1.58	78	109	328	442	957	28.0	13.6	
1999		43.97	2.57	36.50	49.34	37.01	2.30	108	138	423	370	1039	34.9	11.4	
2000		38.03	1.94	38.04	34.50	25.88	1.53	142	106	395	608	1251	33.1	18.6	
2001		36.01	2.03	36.42	49.02	36.77	2.05	67	117	305	284	773	29.9	9.5	
2002		33.65	1.82	37.20	32.40	24.30	1.49	73	53	247	201	574	22.3	6.7	
2003		32.99	1.78	36.09	35.87	26.90	1.57	71	84	269	226	650	25.5	7.3	
2004		40.62	2.08	33.85	37.26	27.94	1.65	102	77	356	360	895	31.6	11.5	
2005		42.48	1.93	35.06	41.02	30.76	1.57	31	76	242	164	513	23.5	5.2	
2006		41.88	1.99	35.60	39.99	29.99	1.61	101	91	333	325	850	28.2	9.7	
2007		37.52	1.70	36.36	40.35	30.26	1.48	121	111	329	382	943	28.4	11.1	
2008		31.00	1.47	42.38	35.19	26.39	1.33	99	76	198	442	815	17.9	13.0	
2009		33.31	1.66	43.18	33.46	25.09	1.39	123	50	300	381	854	22.2	11.8	
2010		36.90	1.73	44.35	44.05	33.04	1.62	155	96	347	508	1106	27.2	16.0	
2011		25.60	1.39	47.26	41.69	31.27	1.57	108	84	282	410	884	22.7	13.5	
2012		37.48	1.74	44.78	44.34	33.26	1.61	88	75	407	540	1110	31.7	18.9	
2013		33.13	1.82	50.92	61.83	46.37	2.25	166	48	356	665	1235	28.5	25.1	
2014		38.31	1.91	52.41	56.20	42.15	2.03	94	29	320	441	884	28.0	20.6	
2015		34.23	1.71	49.11	48.95	36.71	1.79	145	70	370	500	1085	37.7	25.3	
2016															
2017															
2018															
2019															
2020															
2021															
2022															
2023															
2024															
2025															

FIGURES



Comments:



E106 - Piney
 HA 92, 94
 Revised - 12/88

 Parturition Area

2014 - JCR Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2014 - 5/31/2015

HERD: EL107 - UPPER GREEN RIVER

HUNT AREAS: 93, 95-96

PREPARED BY: DEAN CLAUSE

	<u>2009 - 2013 Average</u>	<u>2014</u>	<u>2015 Proposed</u>
Trend Count:	2,575	2,866	2,800
Harvest:	430	448	500
Hunters:	1,173	1,247	1,250
Hunter Success:	37%	36%	40%
Active Licenses:	1,238	1,355	1,250
Active License Success	35%	33%	40%
Recreation Days:	9,566	11,258	11,000
Days Per Animal:	22.2	25.1	22
Males per 100 Females:	27	35	
Juveniles per 100 Females	31	36	

Trend Based Objective (± 20%)

2,500 (2000 - 3000)

Management Strategy:

Recreational

Percent population is above (+) or (-) objective:

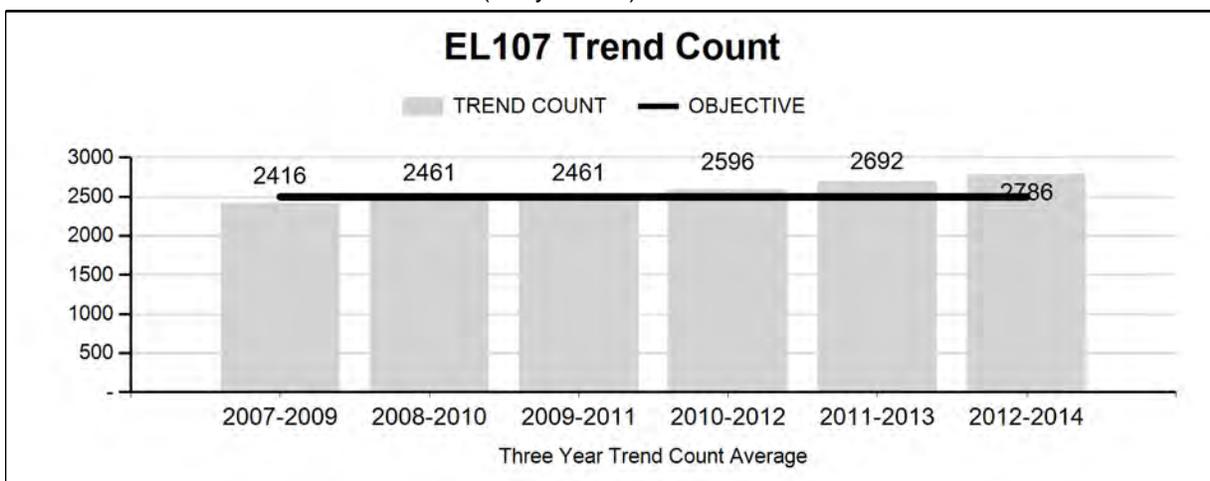
15%

Number of years population has been + or - objective in recent trend:

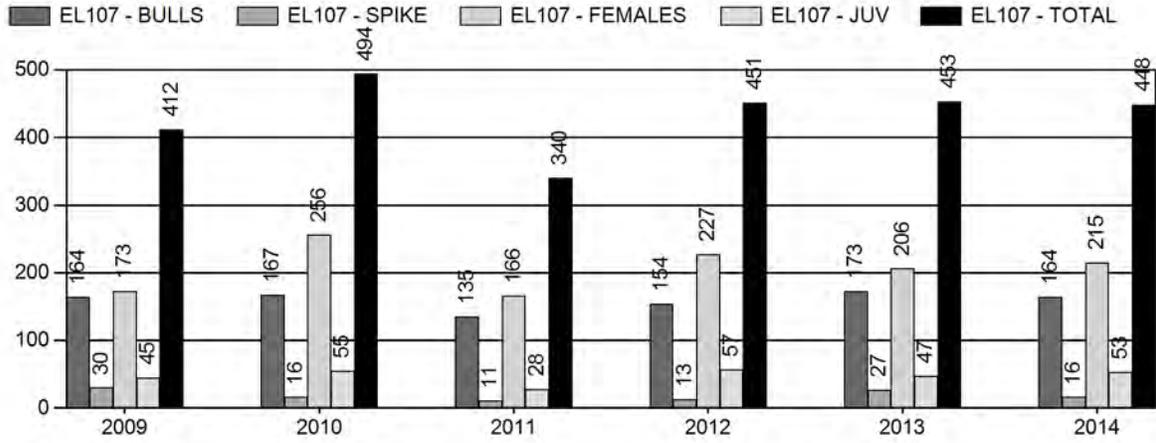
0

Proposed harvest rates (percent of pre-season estimate for each sex/age group):

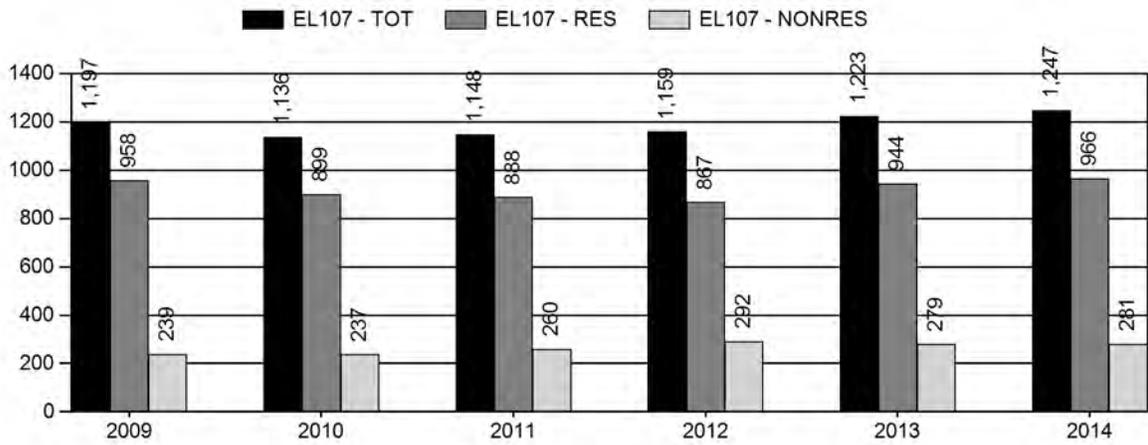
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



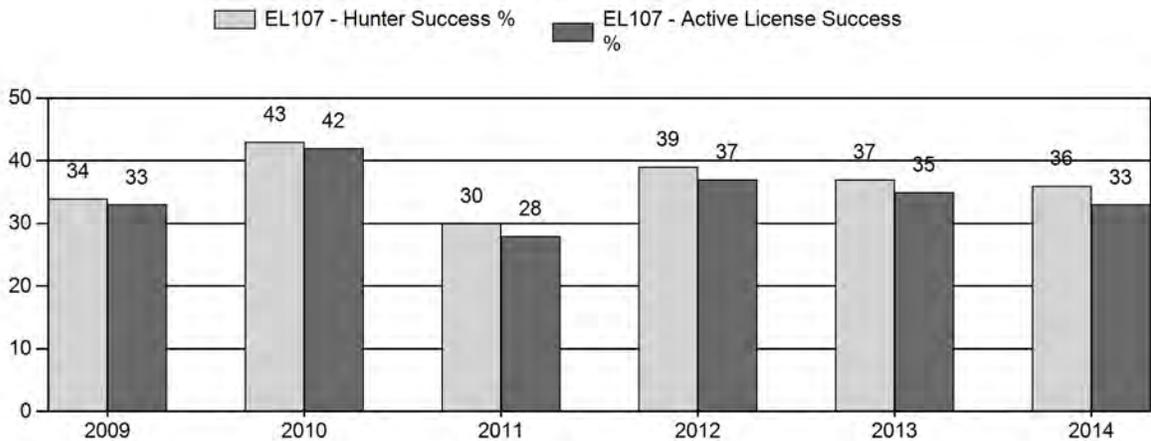
Harvest



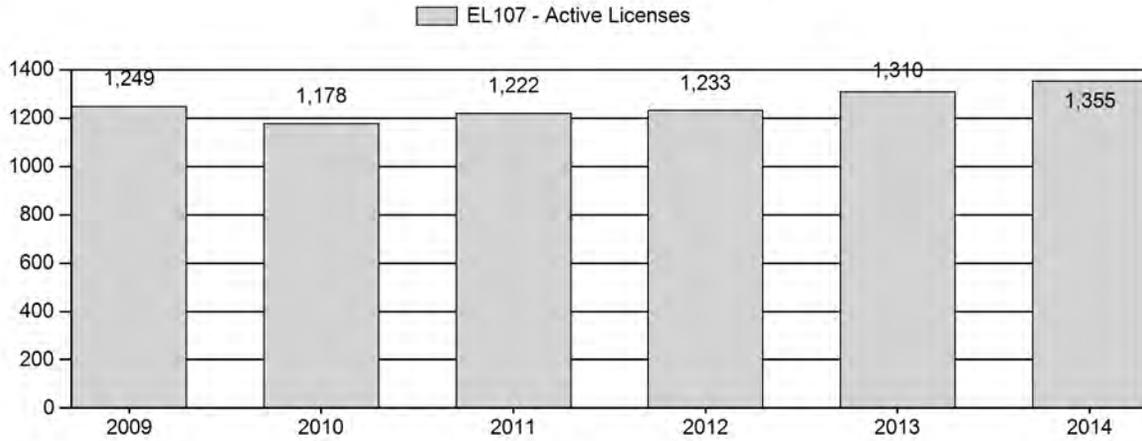
Number of Hunters



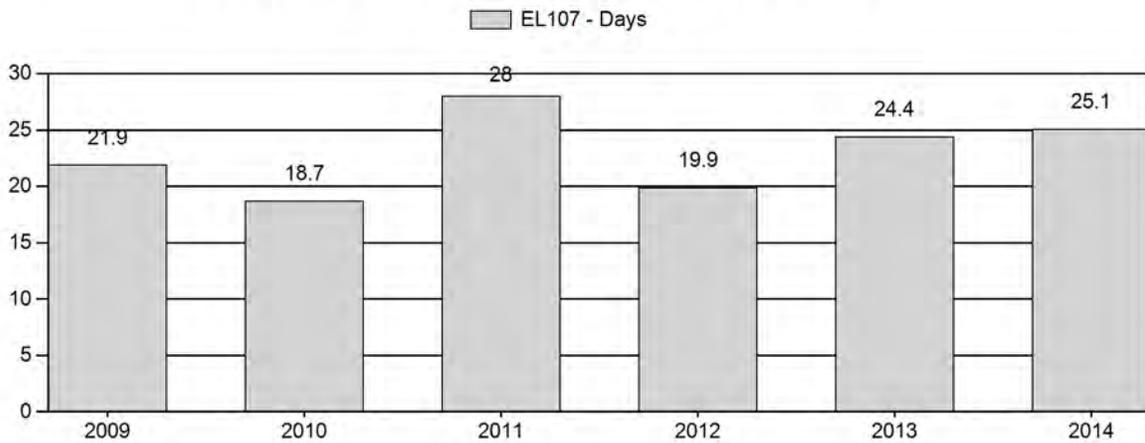
Harvest Success



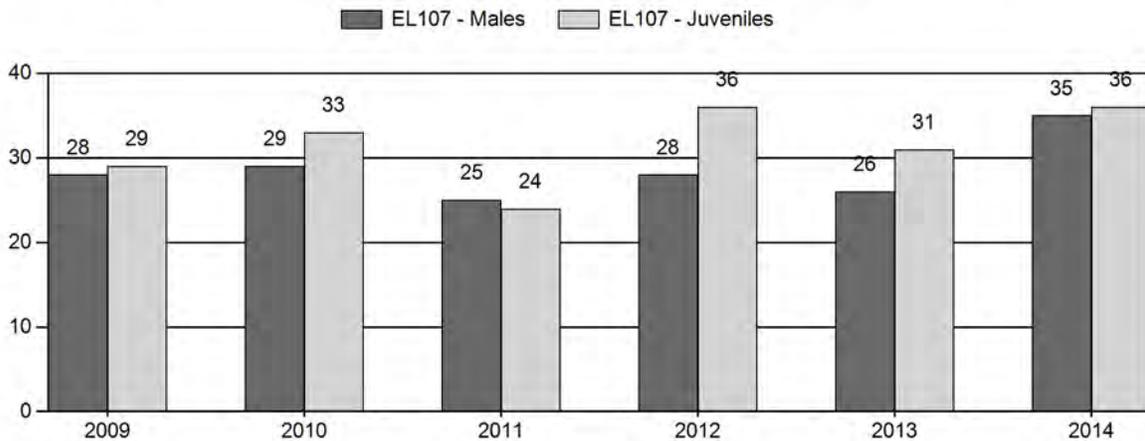
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2009 - 2014 Postseason Classification Summary

for Elk Herd EL107 - UPPER GREEN RIVER

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	Cls Obj	Males to 100 Females			Young to			
		Ylg	Adult	Total	%	Total	%	Total	%			Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2009	2,639	134	241	375	18%	1,328	64%	384	18%	2,087	337	10	18	28	± 1	29	± 1	23
2010	2,550	173	273	446	18%	1,547	62%	506	20%	2,499	393	11	18	29	± 0	33	± 0	25
2011	2,621	159	270	429	17%	1,736	67%	417	16%	2,582	274	9	16	25	± 0	24	± 0	19
2012	0	180	278	458	17%	1,649	61%	599	22%	2,706	441	11	17	28	± 0	36	± 0	28
2013	0	208	254	462	17%	1,777	64%	548	20%	2,787	364	12	14	26	± 0	31	± 0	24
2014	0	155	425	580	20%	1,676	58%	610	21%	2,866	478	9	25	35	± 0	36	± 0	27

2015 Seasons – Upper Green River Elk Herd Unit (E107)

Hunt Area	Type	Opens	Closes	Quota	License	Limitations
93	1	Oct. 1	Oct. 31	175	Limited quota	Any elk
		Nov. 1	Nov. 20			Unused Area 93 Type 1 licenses valid for antlerless elk
	6	Oct. 1	Nov. 20	250	Limited quota	Cow or calf
95	1	Oct. 15	Nov. 5	200	Limited quota	Any elk
	2	Oct. 1	Nov. 5	30	Limited quota	Any elk valid within the Green River drainage upstream from the outlet of Lower Green River Lake, including that portion east and south of Mill Creek
	4	Oct. 15	Nov. 5	200	Limited quota	Antlerless elk
	5	Oct. 1	Oct. 14	25	Limited quota	Antlerless elk valid within the Green River drainage upstream from the outlet of Lower Green River Lake, including that portion east and south of Mill Creek
		Oct. 15	Nov. 5			Unused Area 95 Type 5 licenses valid in the entire area
	6	Oct. 15	Nov. 5	75	Limited quota	Cow or calf
96		Oct. 15	Oct. 31		General	Any elk
	1	Oct. 1	Oct. 31	200	Limited quota	Any elk
		Nov. 1	Nov. 20			Unused Area 96 Type 1 licenses valid for antlerless elk
	4	Oct. 1	Nov. 20	30	Limited quota	Antlerless elk
		Nov. 21	Dec. 31			Unused Area 96 Type 4 licenses; valid west of the elk fence and south of the New Fork Lake Road
6	Oct. 1	Nov. 20	200	Limited quota	Cow or calf	

Archery Seasons						
93, 95, 96		Sept. 1	Sept. 30			Refer to Section 3

Summary of Changes in License Numbers

Area	Type	Changes from 2014
93	4	-50(deleted license type)
EL107 Totals	4	-50

Management Evaluation

Current Mid-Winter Trend Count Management Objective: 2,500

Management Strategy: Recreational

2014 Trend Count: 2,866

Most Recent 3-year Running Average Trend Count: 2,786

The Green River Herd Unit encompasses approximately 837 square miles of occupied elk habitat, almost entirely within Sublette County. Hunt Area 93 (Waterdog Lakes), Area 95 (Green River), and Area 96 (New Fork) make up the Green River Herd Unit. This herd unit is managed under a mid-winter trend objective of 2,500 ($\pm 20\%$) with a herd estimate derived from 3-year trend count average on feedgrounds and native range combined. This herd is managed under “recreational” management, with a management objective for a bull: 100 cow ratio of 15 to 29.

Herd Unit Issues

Managers believe a very high proportion (>90 %) of elk are typically counted in this herd unit and are located on feedgrounds during the winter. This is an extremely “leaky” herd unit and as a result, a population model has not been successfully developed. Large carnivores (wolves and grizzly bears) have reduced hunter participation in the northern portion of this herd unit, and are likely impacting elk productivity/survival. Lack of public access on private lands in Area 93 is limiting harvest and compromising harvest goals, primarily on the female segment of this herd.

Weather

Three elk feedgrounds (Green River Lakes, Black Butte, and Soda Lake) are located within this herd unit to winter animals that otherwise would not be able survive the harsh winter conditions. Heavy snow loads typically make most native forage unavailable on most winters.

Habitat

Roughly 43 square miles of native winter range have been identified, which is mainly located in the upper Green River drainage near Pinyon Ridge and Osborn Mountain where in recent years approximately 100-200 elk have spent the winter. Since over 90% of the elk rely on supplemental feeding (feedgrounds) within this herd unit, winter and other seasonal habitats is not considered to be limiting herd dynamics.

Field Data

The 2014 elk trend count was 2,866, showing an increasing trend compared to the previous five years and the highest count in the past 10 years (Table 1). Snow conditions were below normal on the south end and normal on the north end of this herd unit during the 2013-14 winter. Winter conditions, habitat conditions, wolf activity, and timing of classification surveys have resulted in fluctuating trend count data on all three feedgrounds and native winter ranges in past years (Table 1).

Table 1. Trend Counts in the Upper Green River Herd Unit, 2005-2014.

Location	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Green River Lakes F.G	556	545	615	591	0	606	532	572	627	630
Black Butte F.G	882	616	815	1072	959	405	751	847	475	477
Soda Lake F.G.	577	856	714	650	0	1417	1144	1103	1492	1663
<u>N.W.R.</u>	<u>240</u>	<u>295</u>	<u>220</u>	<u>268</u>	<u>1344</u>	<u>71</u>	<u>155</u>	<u>184</u>	<u>193</u>	<u>96</u>
Herd Unit Total	2255	2312	2364	2581	2303	2499	2582	2706	2787	2866

Composition counts during 2014 revealed a bull:cow:calf ratio of 35:100:36. The 2014 bull and calf ratio was higher compared to the 5-year average of 27:100:31. The 2014 bull ratio is adequate and within management goals for this herd.

Harvest Data

The 2014 harvest report indicated total elk harvest of approximately 450 (270 cow/calves and 180 bulls), similar to the total harvest, but a decrease in bull harvest and increase in cow/calf harvest, compared to 2013. During 2014, 33% of the hunters were successful in harvesting an elk, very similar to the past 5-year average. The 2014 hunter effort of 25 days/harvest was higher than the 5-year average of 22 days/harvest. License quotas and seasons remained similar in 2014 compared to 2013.

Population

Since 2012 a mid-winter trend count has been utilized to manage this herd unit instead of hand-derived population model estimates. This is an extremely “leaky” herd unit and as a result, a functional computer simulation model has never been developed. The mid-winter trend objective for this herd is 2,500 elk ($\pm 20\%$). The 2012-2014 3-year trend average is 2,786 elk, which is within this herd objective.

Disease

During March and April of 2014 approximately 100+ elk, primarily calves, died at or near the Soda Lake feedground due to disease and wolf predation. Investigations concluded the presence of *Fusobacterium necrophorum* from many of the carcasses, the bacterium responsible for foot rot and necrotic stomatitis in elk. Foot rot is a term used for infection of the bacteria when it enters cuts and other openings around the hooves; necrotic stomatitis is the descriptive term for infection of the same bacteria in the mouth. This infectious disease is not uncommon to feedgrounds in west central Wyoming, with occasional outbreaks documented when certain winter and spring conditions increase the prevalence of the disease. Conditions with above average snowfall and above average temperatures create wet conditions causing the bacteria to thrive resulting in infections to elk. Freeze and thaw cycles during these winter conditions cause

crusted snow and jagged ice, resulting in a higher than normal abrasions and opportunities for bacterial infections. The weakened condition of elk with this disease also makes animals more susceptible to predation as several wolf documented elk mortalities were documented. With mild temperature during January and February of 2015 conditions were conducive to another necrotic stomatitis outbreak, resulting in 60+ dead elk (mainly calves) on the Soda Lake feedground by the time elk feeding ended in early-March.

Management Summary

This is an extremely leaky herd unit, and as a result, a functional computer simulation model has not been developed. Overall, the data collected annually in this herd unit has indicated a slow population increases since 2003. The current population (2,786 elk, most recent running average three year trend count) is within management objectives for this herd unit. The 2009 - 2013 seasons were designed to further increase antlerless harvest which has been somewhat successful at achieving that goal. Hunter participation has declined in portions of this herd unit, specifically the northern portions of Areas 93 and 95, but recently in Area 96 as well. This lack of hunter participation has resulted in only a portion of antlerless and cow/calf licenses being sold. It appears predation from wolves and bears may be compensating for lower hunter/harvest rates in this herd unit, as population trends have only slightly increased in recent years. Disease and wolf related elk losses estimated from the Soda Lake area during the past two winters has also attributed a somewhat stabilized elk population.

The 2015 seasons for the Upper Green River Herd Unit are similar to 2014, which are designed to maintain past bull harvest rates and provide liberal opportunities for female (antlerless) harvest. The same October 1 – November 20 season with no changes in limited quotas licenses (175 Type 1 and 250 Type 6), except the elimination of Type 4 licenses that did not sell in past years, will be available in Area 93.

In Area 95, the same season length (October 15 – November 5) and limited quota licenses (200 Type 1, 30 Type 2, 200 Type 4, 25 Type 5, and 75 Type 6) will remain the same in 2015.

The 2015 General season in Area 96 will remain same as in 2013 with a October 15 – 31 “any” elk season. License quotas and season length (October 1 to November 20) will remain the same for Type 1 (n=200) and Type 6 (n=200) compared to 2013. The Type 4 (antlerless elk) quota will remain at 30 licenses with the same October 1 – November 20 season as other limited quota licenses for this Area. These Type 4 licenses will then be valid in that portion of Area 96 west of the elk fence and south of New Fork Lake Road from November 21 – December 31 to address damage and livestock co-mingling on private lands.

A projected harvest of 500 elk (200 bulls, 250 cows, and 50 calves) for 2015 should result in a post season trend count of approximately 2,800 elk.

BRUCELLOSIS MANAGEMENT (E107) – 2014

SURVEILLANCE/RESEARCH

Ear tags are permanently affixed to all elk captured and released during brucellosis surveillance and research efforts. Ear tags are recovered when the animal is harvested or a carcass is discovered. This effort aids in our knowledge of elk distribution and facilitates understanding of how brucellosis and other diseases could be spread among herd units.

Soda Lake Feedground

Two adult female elk were captured via chemical immobilization (1.0ml Carfentanil and 0.5ml Xylazine) at this feedground on February 14th and one on February 25th, 2015. All three tested seronegative for brucellosis, but the sample is too small for a significant brucellosis seroprevalence estimate of the feedground population. The three adult females were determined to be pregnant via use of a portable ultrasound and all outfitted with Vaginal Implant Transmitter (VITs) and GPS collars. The GPS collars record a location every 30 minutes for two years and the VITs will be expelled upon either abortion or parturition during late winter/spring of 2015. These efforts are part of region-wide ongoing project to evaluate elk distribution/movement with respect to brucellosis transmission to identify high risk areas.

An outbreak of necrotic stomatitis occurred on several feedgrounds during February and March of 2015. Around 50 elk (13 adults and 37 calves) died on the Soda Lake feedground. *Fusobacterium necrophorum* was detected via PCR at the Wyoming wildlife disease laboratory in Laramie from samples obtained during necropsies on site. A second consecutive year of unusually warm and wet conditions in late winter in western Wyoming coupled with a record number of elk counted on the feedground (n=1,663) likely contributed to the outbreak. The outbreak was mitigated by utilizing over-the-snow equipment to plow feedlines on area off of the feedground proper and by ending feeding earlier.

Black Butte Feedground

Three adult female elk were captured via chemical immobilization (1.0ml Carfentanil and 0.5ml Xylazine) at this feedground on February 23rd, 2015. All three were outfitted with GPS collars that record a location every 30 minutes for one year. Two were determined to be pregnant via use of a portable ultrasound and both outfitted with Vaginal Implant Transmitter (VITs) that will be expelled upon either abortion or parturition during late winter/spring of 2015. All three elk tested seronegative for brucellosis in 2015, but the sample size is far too few for a statistically significant brucellosis seroprevalence estimate of the population attending Black Butte feedground. One aborted fetus was opportunistically recovered from this feedground in March 2015 from an unmarked animal.

Green River Lakes Feedground

Three adult females were captured via chemical immobilization (1.0ml Carfentanil and 0.5ml Xylazine) at this feedground on February 20th, 2015 and outfitted with GPS collars. All three were determined to be pregnant via portable ultrasound and were also fitted with Vaginal Implant Transmitters (VITs). All three elk also tested seronegative for brucellosis, but the sample size is too small for a statistically significant brucellosis seroprevalence estimate of the population attending Green River Lakes feedground.

STRAIN 19 VACCINATION

Soda Lake Feedground

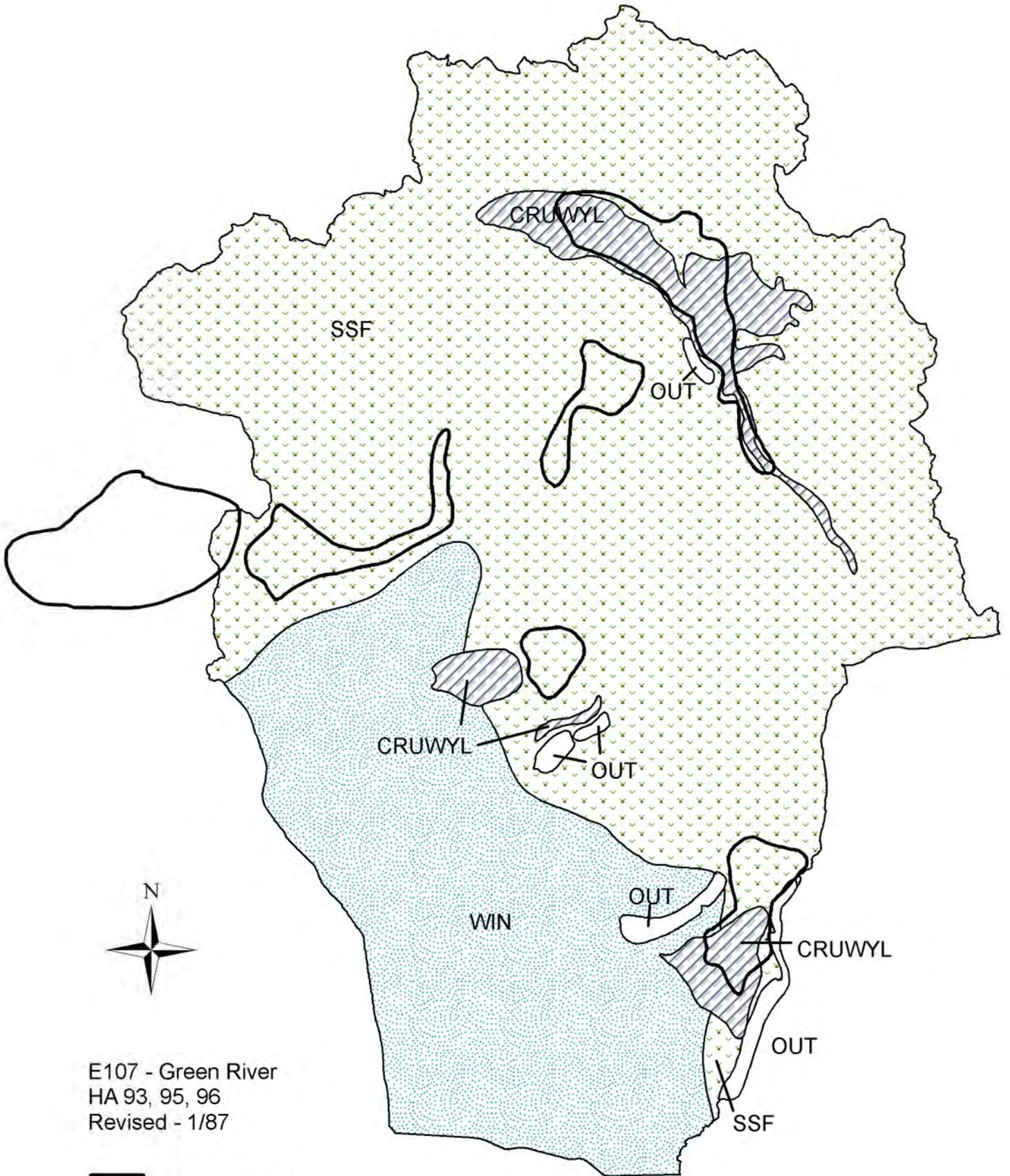
Strain 19 was first administered at this feedground in 1992. No elk were vaccinated in 2015 due to the Necrotic stomatitis outbreak with concerns of it hastening mortality in sick calves. Since 1992, there have been 2,444 juveniles and 821 adult females vaccinated.

Black Butte Feedground

Vaccination was completed for the twenty-fourth consecutive year at this feedground. A total 147 of the 150 classified juveniles (98% coverage) were vaccinated over a 9-day period in February and March. Since 1989, a total of 4,561 juveniles and 909 adult females have been inoculated.

Green River Lakes Feedground

There were 90 calves vaccinated of the 118 classified at this feedground this year (76% coverage). The total vaccine doses administered since the program's initiation at this feedground twenty-nine years ago is 2,645 for juveniles and 1,006 for adult females.



E107 - Green River
 HA 93, 95, 96
 Revised - 1/87

 Parturition Area

2014 - JCR Evaluation Form

SPECIES: Elk
 HERD: EL108 - PINEDALE
 HUNT AREAS: 97-98

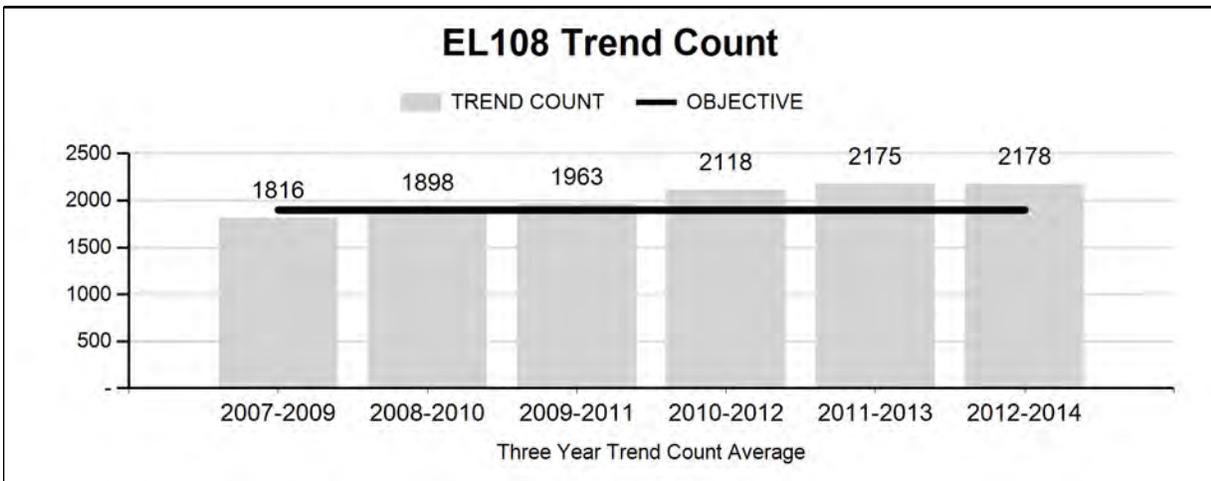
PERIOD: 6/1/2014 - 5/31/2015
 PREPARED BY: DEAN CLAUSE

	<u>2009 - 2013 Average</u>	<u>2014</u>	<u>2015 Proposed</u>
Trend Count:	2,055	2,148	2,000
Harvest:	473	504	525
Hunters:	1,293	1,616	1,500
Hunter Success:	37%	31%	35%
Active Licenses:	1,334	1,696	1,500
Active License Success	35%	30%	35%
Recreation Days:	8,347	13,334	12,000
Days Per Animal:	17.6	26.5	22.9
Males per 100 Females:	23	24	
Juveniles per 100 Females	28	25	

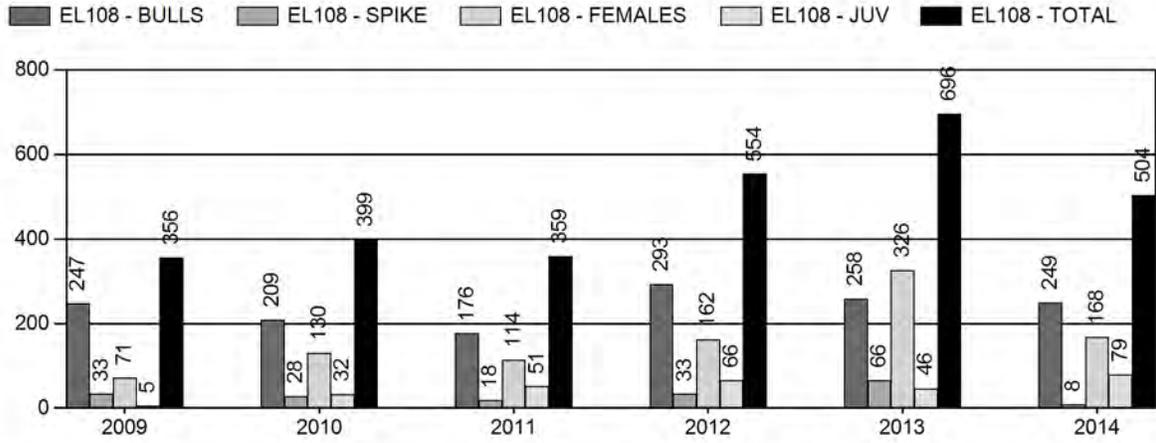
Trend Based Objective ($\pm 20\%$) 1,900 (1520 - 2280)
 Management Strategy: Recreational
 Percent population is above (+) or (-) objective: 13%
 Number of years population has been + or - objective in recent trend: 0

Proposed harvest rates (percent of pre-season estimate for each sex/age group):

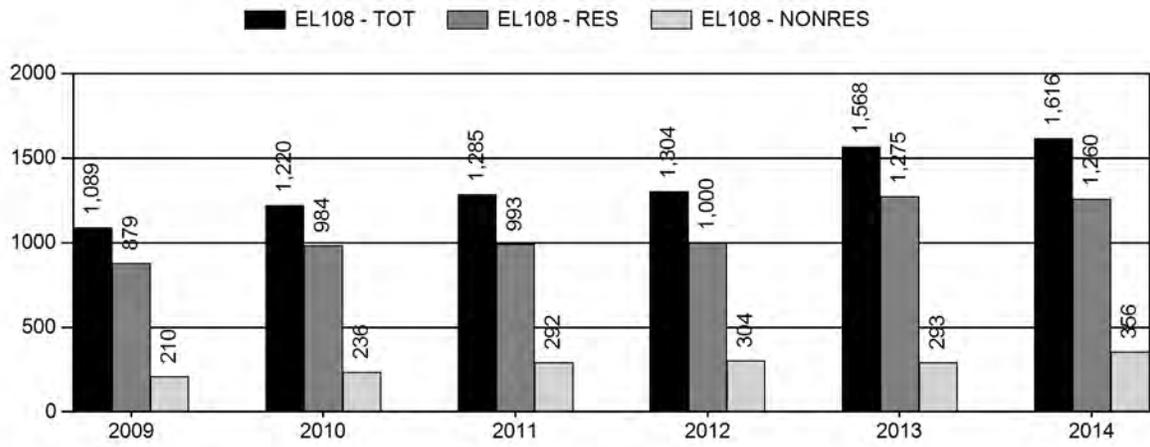
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



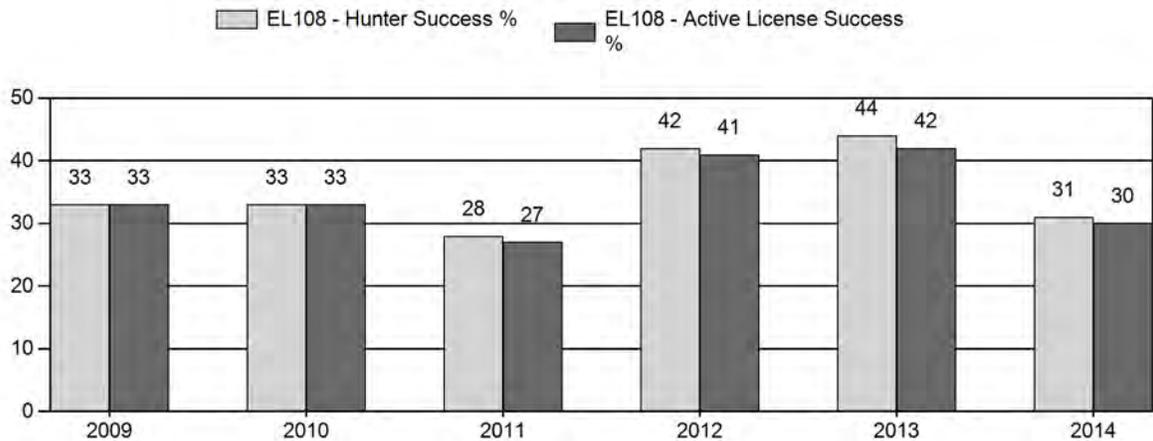
Harvest



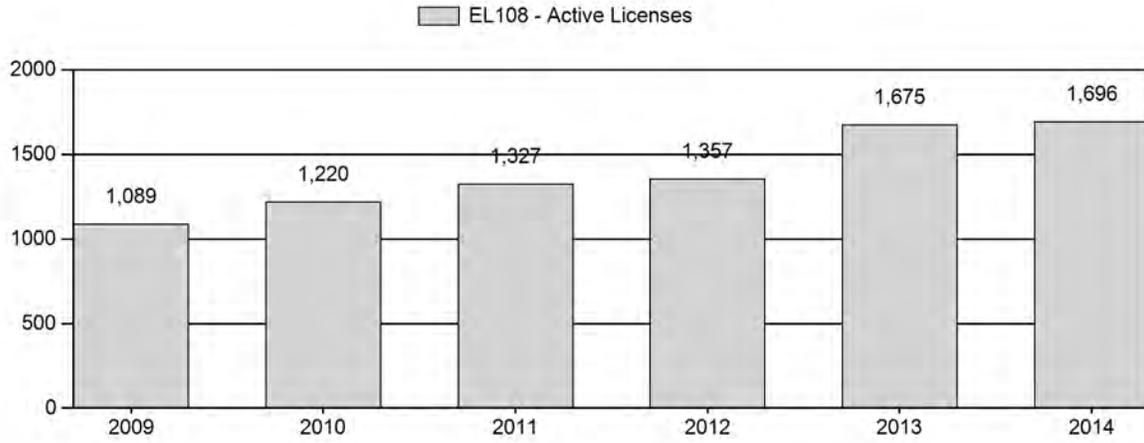
Number of Hunters



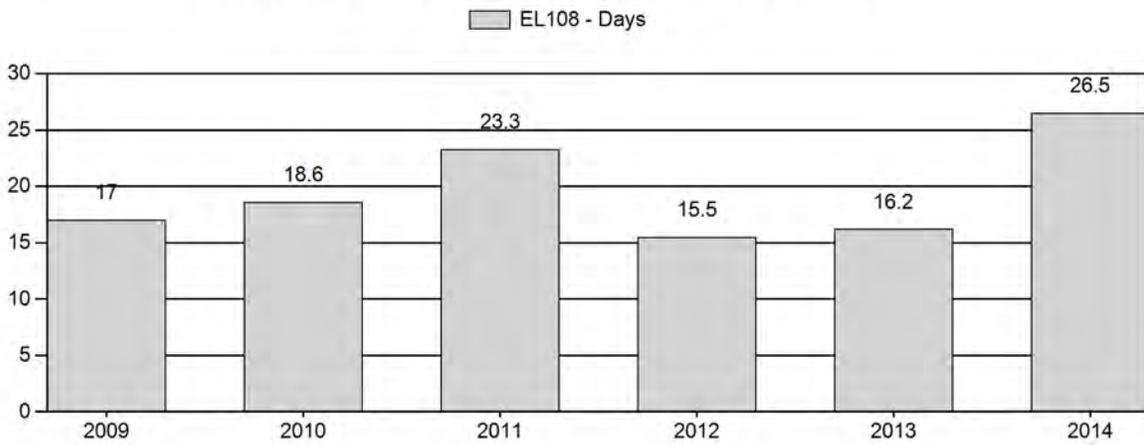
Harvest Success



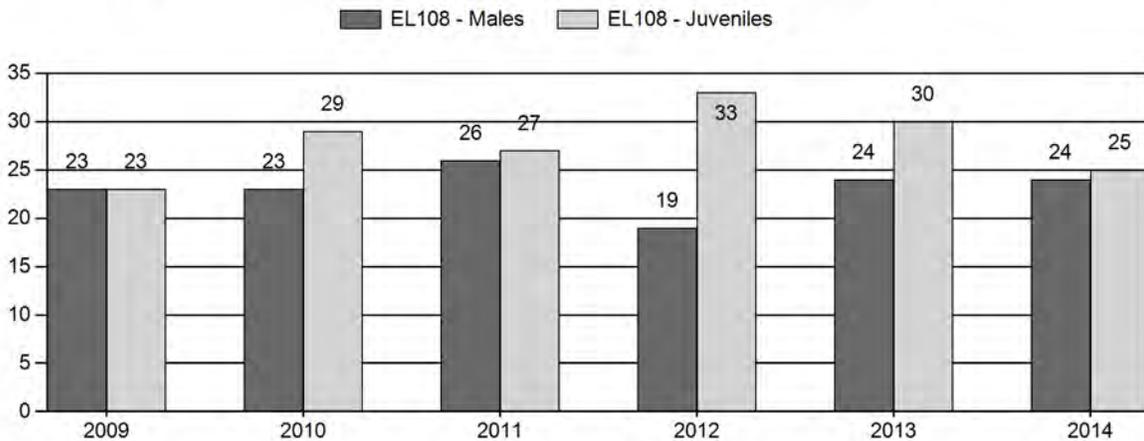
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2009 - 2014 Postseason Classification Summary

for Elk Herd EL108 - PINEDALE

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	Cls Obj	Males to 100 Females			Young to			
		Ylg	Adult	Total	%	Total	%	Total	%			Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2009	1,980	90	187	277	16%	1,203	69%	273	16%	1,753	240	7	16	23	±0	23	±0	18
2010	2,000	102	186	288	15%	1,253	66%	366	19%	1,907	315	8	15	23	±0	29	±0	24
2011	2,168	144	219	363	17%	1,401	66%	374	17%	2,138	296	10	16	26	±0	27	±0	21
2012	0	120	149	269	13%	1,404	66%	457	21%	2,130	368	9	11	19	±0	33	±0	27
2013	0	158	174	332	16%	1,383	65%	418	20%	2,133	334	11	13	24	±0	30	±0	24
2014	0	133	207	340	16%	1,429	67%	356	17%	2,125	260	9	14	24	±0	25	±0	20

2015 Seasons – Pinedale Elk Herd Unit (EL108)

Hunt Area	Type	Opens	Closes	Quota	License	Limitations
97	Gen	Oct. 1	Oct. 15		General	Any elk
		Oct. 16	Nov. 20			Antlerless elk
	1	Sept. 20	Oct. 31	225	Limited quota	Any elk
		Nov. 1	Nov. 20			Unused Area 97 Type 1 licenses valid for antlerless elk
	6	Sept. 20	Nov. 20	125	Limited quota	Cow or calf elk
98	Gen	Oct. 1	Oct. 15		General	Any elk
		Oct. 16	Nov. 20			Antlerless elk
	1	Sept. 20	Oct. 31	350	Limited quota	Any elk
		Nov. 1	Nov. 20			Unused Area 98 Type 1 licenses valid for antlerless elk
	4	Sept. 20	Nov. 20	75	Limited quota	Limited quota; antlerless elk
	6	Sept. 20	Nov. 20	300	Limited quota	Limited quota; cow or calf elk
		Nov. 21	Jan. 31			Unused Area 98 Type 1, Type 4, and Type 6 licenses valid for antlerless elk between the Scab Creek and the East Fork River drainage, excluding Irish Canyon Creek and Muddy Creek Drainages.
Archery Seasons						
97,98		Sept. 1	Sept. 19			Refer to Section 3

Summary of Changes in License Numbers

Area	Type	Changes from 2014
97	1	-75
EL107 Totals	6	-75

Management Evaluation

Current Mid-Winter Trend Count Management Objective: 1,900

Management Strategy: Recreational

2014 Trend Count: 2,148

Most Recent 3-year Running Average Trend Count: 2178

The Pinedale Herd Unit encompasses approximately 2,474 square miles of which only 522 square miles are considered occupied elk habitat. Only a small portion of this herd unit on the south end, is located in Sweetwater County, while the majority lies in Sublette County. Hunt Area 97 (Pinedale) and Area 98 (Boulder) make up the Pinedale Herd Unit. This herd unit is managed under a mid-winter trend objective of 1,900 ($\pm 20\%$) with the herd estimate derived from the 3-year trend count of elk on feedgrounds and native ranges combined. This herd is managed under “recreational” management, with a management objective for bull: 100 cow ratio of 15 to 29.

Herd Unit Issues

Managers believe a very high proportion (>90%) of elk are typically counted in this herd unit and are located on feedgrounds during the winter. This is an extremely “leaky” herd unit and as a result, a population model has not been successfully developed. Well over half of these Forest Service managed lands are designated as Wilderness (Bridger Wilderness) where access is limited to foot or horseback travel. The remaining Forest Service lands outside wilderness have moderate vehicle and trail access. Hunting opportunities for self-guided non-residents is limited in this herd unit because non-residents are required by law to have a licensed guide or outfitter while hunting in designated wilderness areas. Lack of public access on private lands in Area 98 along Scab and Silver Creeks provides a “refuge” for elk, continuing to limit harvest and compromising female elk harvest goals.

Weather

Three elk feedgrounds (Fall Creek, Scab Creek, and Muddy Creek) are located within this herd unit to winter animals that otherwise would not be able survive the harsh winter conditions. Feedgrounds also reduce depredation to stored hay and reduce risk of disease transmission to livestock (primarily brucellosis).

Habitat

Roughly 32 square miles of crucial native winter range have been identified in this herd unit, wintering roughly 100-150 elk in recent years. Since over 90% of the elk rely on supplemental feeding (feedgrounds) within this herd unit, winter and other seasonal habitats are not limiting herd dynamics.

Field Data

The 2014 elk trend count of 2,148 was similar to the 2,133 elk counted in 2013. The 2012 trend count was the highest documented in the past 10 years (Table 1). As with most years, greater than 90% of the trend count came from elk on feedgrounds. Below normal snow levels and more open terrain during early March of 2015 likely influenced the number of elk missed during the helicopter survey on native ranges (away from feedgrounds).

Table 1. Herd Composition Counts in the Pinedale Elk Herd Unit, 2005-2014

Location	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Fall Creek F.G	506	529	494	527	0	554	655	675	660	704
Scab Creek F.G	810	750	776	754	600	780	806	912	727	850
Muddy Creek F.G	431	383	376	510	422	467	557	522	499	488
N.W.R.	<u>111</u>	<u>96</u>	<u>68</u>	<u>154</u>	<u>766</u>	<u>161</u>	<u>120</u>	<u>144</u>	<u>247</u>	<u>106</u>
Herd Unit Total	1858	1758	1714	1944	1788	1962	2138	2253	2133	2148

Herd composition counts in 2014 documented a bull:cow:calf ratio of 24:100:25. Compared to 2013, the bull ratio was similar and calf ratio decreased in 2014. The previous 5-year average bull:cow:calf ratio was 23:100:28.

Harvest Data

With the termination of the 5-year Test and Removal Pilot Project after the 2009-10 winter, seasons were modified in 2010 to increase female harvest opportunities by adding Type 4 and Type 6 licenses, and allowing general license hunters to harvest “any” elk instead of “antlered” elk, which doubled female harvest in 2010. Since 2010, seasons were designed to incrementally increase antlerless harvest. Since 2013 bull harvest opportunities have been shortened. The 2014 harvest survey reported approximately 500 total elk taken, a significant decrease from approximately 700 elk in 2013. Good forage conditions and mild fall weather can be attributed to the low harvest on both cows and bulls during 2014. During the 2014 hunting season it took an average of 27 days to kill an elk with a 30% success rate being reported. Early October snow during the 2013 season resulted in much better harvest as days/harvest was 16 and the success rate was 42%.

Population

Starting in 2012, a mid-winter trend count has been utilized to manage this herd unit instead a hand-derived population model estimates. This is a somewhat “leaky” herd unit and as a result, a functional computer simulation model has not been developed, which may also be attributed to high bull harvest annually reported in this herd unit. The mid-winter trend objective for this herd is 1,900 elk ($\pm 20\%$). The 2011-2013 3-year trend average is 2,178 elk, which is within this herd objective.

Management Summary

Trend counts in this herd unit indicate elk declined from 2004-2007, recovered during 2008, stabilized somewhat in 2009 and 2010, increased in 2011 and 2012, and stabilized in 2013. Aerial surveys of native ranges and feedground counts indicate that this population may have increased slightly in 2014. Recent counts indicate bull:cow:calf ratios are adequate, although the highest bull harvest reported during the last 10 years occurred in 2012 and 2013. The bull

harvest annually reported for this herd unit is questionable as managers are confident >90% elk are counted (classified) annually and bull harvest rates range from 50% to 60% on most years. Documented elk numbers in 2014 are currently within the management objectives, but are near the upper threshold. Maintaining similar female harvest rates as those reported in 2013 is needed to stabilize and decrease elk numbers in this herd unit.

The harvest objectives for the 2015 seasons are similar to 2014, designed to maintain or increase female harvest while reducing opportunities for bull harvest. Limited quota, Type 1 "any" elk licenses in Area 97 were reduced to 225 (-75 licenses) as demand for these licenses by resident hunters have been low due to limited harvest opportunities outside the Bridger Wilderness. A high percentage of leftover 97 Type 1 licenses have been purchased by nonresidents, resulting in crowding issues and hunter complaints due to limited access and wilderness limitations. This reduction in licenses will also help accomplish goals to reduce bull harvest and improve bull ratios and bull quality within this hunt area. The season length for Type 1 licenses will be Sept. 20 – Nov. 20, valid for antlerless elk from Nov 1. – Nov. 20. The Type 6 licenses will remain at 125, valid from Sept. 20 – Nov. 20 for antlerless elk.

In Area 98, the quota for Type 1 licenses will remain at 350 with a Sept. 20 – Nov. 20 season, valid for antlerless elk from Nov 1. – Nov. 20. Limited quota, Type 4 licenses will remain at 75 and Type 6 licenses will also remain the same at 350 with a Sept. 20 – Nov. 20 season. Similar to past years, antlerless harvest opportunities will be provided for unused limited quota licenses (Type 1, 4, and 6) from Nov. 16 – Jan 31 between Scab Creek and the East Fork River to address damage and cattle co-mingling issues.

General license seasons in both Area 97 and 98 will remain the same in 2015, providing a valuable opportunity for many resident hunters. From Oct. 1 – Oct. 15 General licenses will be valid for "any" elk. From Oct. 16 – Nov. 20 General licenses will be valid for "antlerless" elk.

The hunting seasons for 2015 should result in the harvest of approximately 225 bulls, 250 cows, and 50 calves for a total harvest of 525 elk. This season should result in a postseason 2015 trend count estimate of approximately 2,100 elk.

BRUCELLOSIS MANAGEMENT (E108) – 2014

SURVEILLANCE/RESEARCH

Ear tags are permanently affixed to all elk captured and released during brucellosis surveillance and research efforts. Ear tags are recovered when the animal is harvested or a carcass is discovered. This effort aids in our knowledge of elk distribution and facilitates understanding of how brucellosis and other diseases could be spread among herd units.

Muddy Creek Feedground

The five-year elk Test and Slaughter (T&S) pilot project (2006-2010) was effective at reducing brucellosis seroprevalence among elk at all three feedgrounds in the Pinedale elk herd, most noticeably at the Muddy Creek feedground where seroprevalence fell from 37% to 5% during the years of the project. However, post T&S monitoring efforts in early 2012 indicate that exposure to *Brucella* at Muddy Creek had increased during the 2011 brucellosis transmission season (Feb-June); the first year that slaughter was not conducted. Subsequent trapping efforts have indicated that seroprevalence is continuing to climb. In February 12th, 2015, a total of 81 elk were captured, including 56 test-eligible (yearling and adult) females, which were bled and tested to reveal 21% (12/56) had been exposed to *Brucella abortus*.

Brucellosis testing results subsequent to T&S indicate that the efficacy of the project at reducing brucellosis seroprevalence is ephemeral. T&S did not prevent brucellosis transmission events among elk during the 5 years of the project, as several females seroconverted upon recapture during the project. Prevalence of brucellosis in elk attending feedgrounds where T&S was employed will likely increase to pre-project level.

Scab Creek Feedground

Brucellosis surveillance at this feedground is conducted on an every-other-year rotation with the Fall Creek feedground and was not trapped during winter 2015. Upon last check in 2014, seroprevalence had risen to 53%, which greatly exceeds the 2008 pre-T&S level of 21%.

In 2015, two adult female elk were captured via chemical immobilization (1.0ml Carfentanil and 0.5ml Xylazine) at this feedground on January 15th and outfitted with GPS collars that record a location every 30 minutes for one year. One of these was determined to be pregnant via use of a portable ultrasound and outfitted with Vaginal Implant Transmitter (VITs) that will be expelled upon either abortion or parturition during late winter/spring of 2015. An additional female elk was captured using the same method on February 24th to remove a GPS collar that was deployed the previous year, but had failed to drop off. One of the three elk captured at Scab Creek in 2015 tested seropositive for brucellosis, but the sample size is far too few for a statistically significant brucellosis seroprevalence estimate of the population attending Scab Creek feedground in 2015.

Fall Creek Feedground

A successful trapping effort was conducted at this feedground on February 22nd. The primary purpose was to continue to evaluate the long-term effect of the pilot T&S project, which occurred on this feedground during two years of the 5-year project (2009, 2010). A total of 113 elk were captured, including 45 test-eligible (yearling and adult) females. total of 13% (6/45) of elk tested seropositive for the disease, which is up 1% from 2012 and slightly exceeds the pre-T&S level of 11%.

During elk captures in 2015, eight adult female elk at Fall Creek were chemically immobilized. Seven were determine to be pregnant via portable ultrasound and fitted with Vaginal Implant Transmitters (VITs) and radio collars (2 GPS and 5 VHF). The GPS collars record a location every 30 minutes for one year. The VITs will be expelled upon either abortion or parturition during late winter/spring 2015, and the GPS collars are programmed to drop off in January 2015 when they will be recovered and the data retrieved.

STRAIN 19 VACCINATION

Fall, Scab, and Muddy Creek Feedgrounds

Due to the initiation of the pilot T&S project in the Pinedale elk herd unit feedgrounds in 2006, elk have not been vaccinated in effort to reduce the potential for 'false positives', or vaccine reactions, in subsequent T&S trapping or surveillance efforts.



E108 - Pinedale
HA 97, 98
Revised - 12/88

 Parturition Area

